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ABSTRACT

This two-volume document evaluates a college preparation program to encourage minority group high school students to pursue careers in medicine and the health sciences. The following student characteristics are reported: (1) more than 90 percent are members of minority groups; (2) the majority come from low-income single-parent families; and (3) most were not considered academically gifted when they entered the program. The following outcomes are reported: (1) one-quarter of participants seek advanced-placement college courses; (2) participants' scores on the Scholastic Aptitude Tests (SATs) exceed the norms for their racial/ethnic groups; and (3) more than 90 percent of program graduates enroll in college, pursuing majors in medicine, biomedical science, and other health-related fields. The following support and guidance features are reported: (1) counseling services; (2) summer academic programs; (3) extended school day programs; and (4) adequate program funding. The following teacher and instructional characteristics are reported: (1) inservice teacher education; (2) a wide variety of instructional strategies; (3) independent learning; (4) hands-on learning; (5) highly integrated learning; (6) frequent monitoring and evaluation; and (7) maximizing time-on-task. Issues and program dynamics that affect replication are discussed. Biographical sketches of some students are provided in highlighted boxes. Statistical data are presented in 22 tables. A list of 13 references is appended. Volume 1 contains the full report, preceded by an "Executive Summary". Volume 2 contains reports of the site visits made at 6 of the 39 program sites. data are presented in 22 tables. A list of 13 references is appended. (FMW)

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Expanding Horizons

A Vision for Our High Schools

A Report from The McKenzie Group to

The Josiah Macy, Jr. Foundation

October 1990

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Expanding Horizons
A Vision for Our High Schools

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Foreword

American public education faces an unprecedented challenge. The academic achievement of the nation's secondary students must increase substantially if we are to survive as a democracy and meet the demands of increasingly fierce international competition. This increased performance must come, not just from our best students, but from all students, especially the growing numbers of poor children, children of color and children whose first language is not English.

The urgency of this challenge has led President Bush to declare himself the "education president;" it has led the governors and the President, who had convened only twice before in our nation's history, to meet to set national goals for education; and it has led the nation's business leaders to make the improvement of education a corporate priority.

This report, an evaluation of the Macy high school programs, brings good news to all of these leaders and to every American who cares about our economic and civic well-being as a nation. The Macy programs clearly demonstrate that poor and minority students can excel academically in the most demanding courses of study. The accomplishments, enthusiasm, and aspirations of the Macy students should serve as a source of renewed commitment for America's leaders to ensure that all children are provided with the educational opportunities which promote the kind of promising results witnessed in the Macy programs. Furthermore, the Macy program approach is a relatively low-cost approach to school improvement which is proving its ability to reap dramatic returns on its investment.

As this report details, the Macy programs embody much of what we already know is essential to student success and therefore, underscore what needs to be present in all our schools. Some of these important elements include:

- Students know they are capable of achieving high academic standards. High self-expectations and high teacher expectations are critical.
- Simply imposing more demanding coursework is not enough. When higher standards are set, students have to have the assistance and support to meet those standards.

- Teachers, through an investment in professional development, are well-versed in both subject area content and instructional strategies.

- A singleness of purpose for student success among teachers, administrators, students and parents is developed through shared decision-making and an array of support services and enrichment activities.

The success of the Macy programs, however, did not materialize overnight and as the report indicates, the programs are not without some unresolved important questions. Do such special programs enhance or detract from the total school program? Will the human and financial resources invested in the programs drain needed dollars and energy away from other students? How can the programs be institutionalized and still maintain their energy and a sustained record of positive results? The answers to these questions must be carefully considered in any effort to replicate the Macy program approach.

Despite these issues, the growing record of achievement among the Macy programs is impressive and for all those engaged in finding ways of improving secondary education, the lessons learned from these programs are most instructive.

In truth, however, this report should never have had to be written. The Macy programs are basically stories about good schooling. The fact that this good schooling is producing solid results with poor and minority students should be immaterial. Such results should be commonplace.

And it is our contention that similar (or better) student outcomes can be achieved at all schools. The Macy high school programs not only show us once again that all children can learn but also that we know how to teach them. There is no mystery to this — we know how to do it — all we need is the will.

David S. Tatel David W. Hornbeck Floretta D. McKenzie

Executive Summary

Background

This report, Expanding Horizons: A Vision for Our High Schools, is a compilation of findings resulting from an 18-month study of high school programs supported by the Josiah Macy, Jr. Foundation. These programs are designed to strengthen the academic preparation of poor and minority students and therefore, their opportunities for successfully completing postsecondary studies, especially in health-related fields.

After a long history of supporting college-level efforts to bolster the number of minority students enrolling in medical schools, the foundation in 1981 refocused its support to the high school level, supporting programs which provide poor and minority students with a rigorous course of study emphasizing math and science subject areas.

To launch the new program approach, the foundation intentionally sought public high schools with poor performance records located in sites populated by poor and minority families.

The first four-year grants were awarded in 1981 to A. Philip Randolph Campus High School in the Harlem section of New York City; Clara Barton High School for Health Professions in Brooklyn, New York; and under the direction of the University of Alabama, five rural high schools in western Alabama. In 1986, a second group of four-year grants was awarded to support programs at DeWitt Clinton High School in the Bronx, New York; James Hillhouse High School in New Haven, Con-

necticut and Tuba City High School, located in Arizona on the nation's largest Native American reservation. Also, the original sites were given continuation grants and the University of Alabama expanded its program to include 29 additional schools spread across nine counties.

In 1989, the Macy high school programs were operating in 39 schools and serving more than 3,000 students. The students involved in these programs are a diverse group, but they do share some common traits. Nearly all have never had the advantage of financial security in their families; almost 70 percent are minorities. At two of the sites, two-thirds or more of the students' parents were born outside the United States; for a substantial number of these students, English is the second language spoken in their homes. At the New York City sites, from 37 percent to 56 percent of the Macy participants come from single-parent families.

These are student characteristics which could be identified in thousands of classrooms across the United States. However, a different variety of commonly shared traits also are observable among the students across the Macy programs — attributes which may not be seen so frequently in other schools. The excitement about learning and the expectations of success are palpable in the programs. The students have a strong identification with the high academic goals of these programs and are proving their abilities to master subject matter which far exceeds the demands of most honors-level high school courses.

After nearly a decade of operation, the Macy high school programs appear to be reaping the rewards for which they were created. Scholastic achievement is up; college acceptances are commonplace; Macy graduates appear to have a "staying power" in the colleges of their choice and are pursuing science or health-related studies in greater numbers.

This report examines these phenomena at close range, describing the Macy programs in action and focusing on the Macy students and their teachers, counselors, and administrators who exhibit a singular commitment to learning, achieving and succeeding. The report examines the students' achievements as well as the curriculum, instructional strategies, academic climates and school cultures which contribute to the programs' growing records of success.

The development and current operations of the Macy programs hold some very significant lessons for all those interested in improving public education and producing more capable, skilled high school graduates. However, as the report details, the Macy programs were not overnight successes. They were developed painstakingly, sometimes by trial and error, by school administrators, teachers, and university-based partners who have a dogged determination where their students are concerned.

These programs are not miraculous cures for all the ailments confronting the nation's high schools. They, like most improvement undertakings, have had difficulties in ensuring an evenness of implementation, in gaining sustained support from educational bureaucracies and

in securing the needed resources for optimal program operation. As the report examines, the programs also raise issues regarding the equitable distribution of educational resources, the applicability of the program approaches to all student populations, and the best methods of retaining students in such demanding courses of study.

In fact, it is because these programs, despite their remarkable successes, are still grappling with such issues that they are particularly valuable to the larger educational arena and those attempting to improve the nation's secondary schools. The programs not only have incorporated and developed some proven strategies for increasing student achievement but also have helped to alert school leaders to the many considerations which must accompany the planning for all improvement efforts.

The Macy Students

Ethnic and Cultural Diversity

With the exception of the Alabama programs, minority students comprise in excess of 90 percent of the Macy program enrollments. For example, 46 percent of the Dewitt Clinton Macy students are Puerto Rican or of another Hispanic background; another 46 percent of the students are African American. In the Macy program at Hillhouse in New Haven, 92 percent of the students are African American; 4 percent are Puerto Rican. Ninety-five percent of the Tuba City, Arizona students in the Macy program are Native American.

For the parents of many Macy students, the United States is a second home. At Barton and Dewitt Clinton, for instance, three quarters of the parents or more are not native born. Given this, the frequency of Macy homes where English is not the primary language spoken is not surprising. Over half the students at DeWitt Clinton come from settings where English is the second language. At the other New York sites, one-fifth to one-third of the students are from homes where another language (usually Spanish) predominates. Furthermore, it is estimated that more than half of the Macy students in Tuba City come from homes where Navajo is the dominant language.

Economic Factors

The majority of Macy students come from families which, if they do not meet official standards of "poverty," certainly qualify as "lower income." The 1990 class of Macy students reported their family incomes in the following way: 19 percent with incomes below $10,000 per year; 48 percent with incomes between $10,000 and $25,000 per year; and 29 percent with incomes exceeding $25,000 each year.

Family Structures

Nationally, the number of one-parent households rose from 12.8 percent in 1970 to 27 percent in 1987. The number of single-parent families among the Macy students at four of the six sites, however, far surpass these national figures. At Hillhouse, Randolph and Clinton, half the Macy students live in single-parent families. At Barton, 37 percent of the students come from homes where only one parent is present. Only at the Tuba City and Alabama sites are the Macy student figures in this regard comparable with the national numbers. One-fourth of the Tuba City Macy students live in single-parent homes and one-fifth of the Alabama students are members of one-parent households.

Academic Standing

All Macy programs have admission criteria. In general, those criteria are reading and mathematics abilities which are on grade level and about a B average in the eighth grade. But most Macy teachers contend that these standards are deceptive. A great many of the students, the teachers report, meet the criteria, but have significant deficiencies in basic skills.

Furthermore, two of the programs — Clinton and Barton — recruit students who only marginally meet the Macy requirements. These "promise" students are admitted to the program because of factors other than academic records, such as motivation, study habits, and other less quantifiable traits.

Although each of the programs is regarded, by students and faculty alike, as an honors course of study, this seems to be due more to the curricular rigor than to the academic level of the students coming into the program. A general descriptor for the scholastic "class" of the entering Macy students is "third quartile." That is, these students fall along the 50th to 75th percentile range in their achievement levels prior to admission to the Macy programs.

While many teachers comment that the Macy students are not the most academically gifted students, they do believe that the students enter the program with a higher level of motivation than most students.

Their Programs

Ironically, two years prior to the issuance of the report, "A Nation at Risk" in 1983, which is largely credited for launching the latest wave of school reform — the Macy programs had already incorporated many of the now commonplace notions of school improvement into their operational designs. Specifically, from the outset, all the Macy programs were developed with the following basic components:

- An exacting curriculum with course requirements far exceeding local standards for graduation.
- Smaller classes, particularly for 9th and 10th grade English and math courses.
- A working relationship with a local institution of higher education to develop curriculum and design staff development activities collaboratively .
- A strong academic and personal support and guidance system for students.
- Student tutorial services and enrichment programs, including an extended school day.
- An emphasis on teacher development, specifically in instructional techniques proving successful with disadvantaged students.
- Direct teacher participation and decision-making in the programs' development and implementation.
- A leader at each program site with singular responsibility for directing and managing the program.

A Demanding Course of Study

Central to each of the Macy programs is a demanding academic course of study. While each program site has developed — and continues to refine — its own course offerings and sequences, a **minimum** set of class requirements for all Macy programs includes:

Four years of English, mathematics, science and social studies;
Two years of a foreign language;
A continuing four-year emphasis on reading, writing and speaking skills;
Advanced Placement courses in biology, calculus, English and social studies;
Formal preparation for standardized tests, such as the Scholastic Aptitude Test (SAT) and the American College Test (ACT); and
Participation in specially designed summer academic programs.

At all Macy program sites, the requirements for graduation far exceed their local school district's standards. At Barton High School, for example, Macy students are required to earn 11 credits more than either the city or state boards of education mandate and Macy students at A. Philip Randolph Campus High School must successfully complete at least one college course and perform 80 hours of community service in addition to their other class requirements. To accommodate the addi-

tional academic requirements, all Macy program sites have at least one extra class period per day.

Just as the quantity of required courses in the Macy programs surpasses most high schools and even other types of honors-level programs, the kinds of courses and their content differ as well. For example, Macy freshmen at Tuba City High School take a combined biology and chemistry course and sophomores take a course which integrates physics with biological chemistry and math. Other classes, more commonly offered at the college level, such as genetics, bacteriology and neurology are a part of the Macy program at A. Philip Randolph High School.

Success and Achievement

The results of the Macy programs can be viewed from two equally important perspectives. On one hand, the success and achievement of the Macy students can be examined as a group: How well are all the students faring on standardized test measures? How many are going on to college? Are they pursuing health-related careers?

But to assess the program outcomes, the local impact must also be examined: How are the Macy students doing relative to their school communities' past records of student achievement? What progress is evident? Is the program making a difference locally? In what ways?

Given the diversity of the Macy program sites, this latter view is particularly illuminating. At some of the Alabama schools, for example, prior to the implementation of the Macy program, the high school had no honors-level program available to the students and could not generate enough parent interest to form a PTA. Now, the schools report, college attendance has risen from 25 to 40 percent of the graduating seniors and the PTA is not only meeting regularly, but the parents, despite severely limited means, are actively involved in raising additional funds to support the program.

Just as the Macy students are recording significant accomplishments at their local schools, when analyzed across all sites as a group, they are also demonstrating some important achievements. Taken as a whole, the Macy students:

- take substantially more math and science courses than do their peers across the country;
- are receiving high grades in math and science courses despite more stringent grading practices and more difficult course content;
- score at or above the 60th percentile in standardized tests of reading, language and mathematics;

- are approaching national averages on the SAT and significantly outscoring national SAT averages for various ethnic groups;
- receive college acceptances from some of the more selective four-year institutions in the country;
- are almost all attending four-year colleges and universities (90%);
- are awarded scholarships and financial aid which cover about 75 percent of all college costs for about one-half of the students; and
- are pursuing college studies in health-related fields, math, and the physical and biological sciences in substantial numbers (40 percent). Of all students nationwide taking the SATs in 1989, only 18 percent indicated that they intended to major in these fields.

Research related to the ability of minority students to complete college indicates that major factors which appear to enhance their success in postsecondary studies include: good high school grades, well-developed study habits, and "relatively high self-esteem in terms of academic ability." Other factors which seem to be particularly related to the retention in college of African American students are high achieving test scores, feeling well prepared in mathematics, and having taken a secondary school curriculum that included a large number of science and foreign language courses.

All of these critical factors seem to be apparent within the Macy programs. The Macy students take considerably more coursework in math, science, and foreign languages than do most American high school students. Sixty-six percent of Macy students, for example, take four or more years of science, compared to a national average of only 39 percent. In mathematics, 75 percent of the Macy students take four or more years of study, while only 64 percent of the nation's high school students complete a comparable number of years in the subject.

Advanced Placement

One indication of the Macy students' preparation for college as well as their confidence in their academic abilities is the percentages of program participants who intend to seek advanced placement in college. One quarter of the 1989 Macy seniors in a sample of 269, for example, indicated on their SAT questionnaires that they would seek advanced placement in biology. Nationally, only eight percent of the students taking the SATs indicated they would seek advanced place-

ment in biology. One-third of the Macy students reported they would apply for advanced placement in mathematics contrasted to only 19 percent of the national population of students taking the SAT.

Scholastic Aptitude Tests (SATs)

An analysis of the Macy students' performance on the SAT provides a more complete picture of their achievement. A sample of 269 of the 1989 scores reveal that the Macy students' results are nearing the national averages, especially on the math portion of the SAT. This approximation to the national averages is especially instructive inasmuch as the ethnic and racial breakdown of the Macy sample was 60 percent African American; 12 percent Puerto Rican; 11 percent other Hispanic backgrounds; 6.3 percent Native American; 4.8 percent Asian; and less than one percent white. (Four percent of the sample did not specify a race or ethnic background.)

An examination of these students' scores when compared to national averages of various race and ethnic groups shows that Macy students consistently outperform their peers on both the math and verbal sections of the test. For example, African American Macy students in the sample scored 56 points higher on the math portion of the SAT than other African Americans taking the test. Similarly, Puerto Rican students in the Macy programs scored 51 points higher on the SAT math section than the national average for all Puerto Rican students taking the test and 41 points higher on the verbal portion.

Analyses of these scores by reported family income and first languages learned also show substantial differences between the Macy students and their peers. Among families with yearly incomes below $20,000, the Macy students score from 8 to 28 points higher than students from similar financial backgrounds. Likewise, Macy students from homes where a language other than English was the first language learned scored 65 points higher on the math test portion than students taking the test with similar language backgrounds. These Macy students scored 20 points higher on the verbal section of the test than their counterparts.

Bound for College

The first graduating class of Macy students in 1987 brought promising evidence that the program's emphasis on an exacting curriculum, strong guidance and support, and a wealth of enrichment activities was a winning combination. Eighty-five percent of the original cohort at Barton, Randolph and the five Alabama schools completed the program. Ninety-five percent were accepted to four-year colleges and universities and half of the students reported their intent to pursue majors in medicine, biomedical science or other health-related fields.

Subsequent classes of Macy graduates have produced similar results. Individual annual reports from all Macy sites indicate that more than

92 percent of the Macy class of 1989 had plans to enter four-year colleges. In 1990, a survey of 210 graduating seniors at the three New York Macy sites, Hillhouse and Tuba City found that 97 percent intend to enroll in four-year institutions in the fall.

Graduate surveys confirm that most Macy students followed through on their stated intentions as high school seniors and did indeed enroll in college after graduation. More than 90 percent of the graduates responding to a 1990 survey indicated that they were currently enrolled in four-year colleges and universities.

Fields of Study

With the first graduating classes of Macy students, the program's ultimate goal of increasing the number of minority students entering health-related careers appears to be bearing fruit. In a sample of 269 Macy students applying for admission to college in the fall of 1990, thirty-eight percent plan to major in fields which often lead to careers in the health professions. About nine percent of this group said they plan studies in engineering, and an additional eight percent plan to major in mathematics and the physical sciences. This sample of Macy students was 90 percent minority (African American, Hispanic and Native American).

This large percentage of Macy students intent on entering collegiate studies in quantitative fields offers the promise of helping to alleviate the severe under-representation of minorities in these areas. While minority students constitute about 20 percent of the college student population, they account for only 1.6 percent of all baccalaureate degrees in math, science and engineering.

Two graduate surveys, one conducted in 1989 and one in 1990, confirm that significant numbers of Macy graduates do declare majors in health-related fields in college. The 1989 survey of 193 program graduates indicated that forty percent of the students were pursuing majors in science and in pre-medical studies. Of the 293 respondents to the 1990 survey, 37 percent of the graduates said they had entered health-related majors.

Their Support and Guidance

If rigorous academics are the heart of the Macy program, then the satellite of supporting and enrichment activities is the soul. Each Macy program has a wide range of academic, social and personal guidance operations — all focused on providing a "safety net" to ensure each student can succeed. This includes before- and after-school tutorials, college-sponsored study and research courses, summer academic camps, field trips for hands-on research experiences, SAT preparation classes, extra counselors, peer tutors, and financial aid counseling.

Furthermore, as new student needs arise or are identified by the faculty, the program staff usually finds ways to address them. Anticipating and providing students with a comprehensive range of support and services are key to the programs' success. This approach also highlights a basic philosophical tenet of the programs: It's not enough to have a tough curriculum, to raise standards and penalize those who miss the mark; schools have an obligation to ensure students' achievement.

In the Macy settings, the academic climate has more to do with human interactions and the presence of an intellectually stimulating environment than the material accoutrements of the school building or classrooms. A culture of shared beliefs, norms and expectations is developed. Students receive clear and consistent messages about the goals of the program. Adults associated with the program continually convey that although the work is difficult and the pace is swift, they know the students are capable of the challenge.

The adults involved in the Macy student's life — teachers, parents, counselors, program directors — play a critical and very prominent role in the students' academic and personal well-being. When asked to describe how their program differs from other school experiences, Macy students are apt to mention the assistance and encouragement they receive first, then only secondarily note the more demanding course of study. Repeatedly, the Macy students point to one — or several — adults in their lives whom they depend upon to be fully "in their corner."

At some program sites, especially Clinton and Hillhouse, the teacher's role in providing counseling — both personal and academic — is especially emphasized. At Hillhouse, for example, the day-to-day support students often need to meet their academic demands is not a function of the counseling office. Teachers and the program administrators assume responsibility for much of the "traditional" guidance role.

Counseling Services

At the New York, Connecticut and Arizona programs, the development of a strong guidance and counseling program has been a particularly high priority. For example, these schools have one counselor who is specifically designated to work full time with the Macy students. These counselors often must divide their time between assisting students with personal issues and a host of responsibilities related to college admissions. They also are often the key persons involved in planning some academic support activities such as SAT preparation seminars, student visits to college campuses, and field trips to local hospitals or research centers to increase students' exposure to different career possibilities.

Academic Support

A hallmark of the Macy programs is the wide range of both summer and school year academic support programs and activities. All Macy students are offered opportunities to attend summer academic camps which focus on the development of study skills, critical thinking, career exploration and math and science studies. For some Macy programs, attendance at the summer program for freshmen is mandatory.

Like the Macy curriculum, these residential summer experiences are highly structured and academically challenging. Students, after a day of classes in math or science, may have up to three hours of homework a night. In addition to intensive coursework, however, the programs also focus on the development of cooperative learning and problem-solving. Spirited academic competitions are also a part of this experience which seems to build strong student identification with the Macy program and its goals.

In addition to the summer orientation programs, Macy students are offered opportunities to attend a number of enrichment programs sponsored by universities. These programs also are generally residential one- or two-week experiences which focus on advanced math and/or science areas. Each year, more than 200 Macy students from across the country attend these programs, often using scholarships provided by the sponsoring university.

School Year Support

In addition to the summer activities, Macy students at all sites are also provided with an extraordinary number of academic supports and enrichment activities. The extended school day at the program often is used, especially with ninth and tenth graders, to focus on study skills development, language and test-taking skills and to reinforce math and science concepts taught during the regular classes. This time is also devoted to giving assistance with homework and individual and small group tutoring. Peer-assisted tutoring also is prevalent in these seventh period classes.

Enrichment activities are almost a daily part of the Macy program. In addition to the summer programs, tutoring services, counseling, and academic seminars, the Macy programs integrate into their classes numerous field trips to museums and laboratories, guest speakers, college nights, science fairs, and math team competitions.

Program Costs

The foundation grants for the programs provide funding for curriculum development, teacher and staff training, student enrichment activities, summer academic camps, prep classes for college entrance exams, and individual tutoring. Annual funding from the foundation ranges from $53,000 to Hillhouse High School to $275,000 for the 34

school programs under the direction of the University of Alabama. The three New York City programs each receive $100,000 per year.

As programs were initiated, sponsoring school systems agreed to provide additional resources to the programs. For example, New York City schools agreed to reduce class sizes in the Macy programs. The school systems also have funded many of the enrichment and summer activities as well as provided the additional counseling personnel. Some sites, especially Alabama, have used their initial successes with the program to attract additional external funding for the program.

Their Teachers and Instruction

The Macy teachers are highly professional, experienced individuals; Most have Master's Degrees and have been teaching for more than eight years. Colleagues often characterize them as "passionate" about their work; administrators describe them as "experts;" and students say they're "tough, but fair," and "understanding."

Most Macy teachers do not teach just Macy students. In Alabama, for example, the Macy teachers may have only one Macy class each day. At Clinton, as a strategy to infuse some of the Macy instructional techniques into all classes, teachers are required to lead both Macy and non-Macy classes each term.

For Macy teachers, especially those at the New York program sites, one of the advantages of teaching Macy classes is that they are substantially smaller than other classes. Macy classes at Clinton, for example, have 20 to 25 students, compared with non-Macy classes of 34 or more students. At the other program sites, the average class size ranges from 20 to 27 students.

Staff Development

A signature element of the Macy programs is the emphasis on staff development. Just as the Macy students are provided with a variety of learning opportunities, so are Macy teachers. From curriculum writing to cooperative learning methods, the Macy teachers are presented regularly with seminars and workshops to help them refine their skills or learn new approaches. Macy teachers often travel to attend special training sessions such as the DNA technology workshops at Cold Spring Harbor Laboratory in Long Island, New York.

Additionally, at each program site, teachers and administrators jointly develop an annual staff development plan, frequently focusing on a particular theme for one semester or the entire year.

Staff development is viewed as an important means for continually improving the quality of teaching at all program sites. However, the approaches to staff development vary from site to site. Some programs

work very closely with the school or program's university partner to develop staff development opportunities for Macy teachers. Other sites, such as Tuba City, independently develop staff development plans which often involve program teachers, representing different discipline areas, working in small groups to focus on ways to integrate key concepts across the curriculum.

At the Macy sites, teachers also are very involved in the development of curriculum. Many of the innovative science and math courses offered in the programs are the product of Macy teachers' efforts.

Instructional Strategies

Macy students and their teachers appear to bring out the best in one another. Macy teachers report that the high level of motivation and engagement that exists among Macy students makes them want to put forth more effort in the classroom and in preparing lessons for their Macy classes. In turn, Macy students say that their teachers' enthusiasm and excitement make them want to work harder and learn more. This mutually reinforcing high level of enthusiasm, excitement, engagement, and effort among Macy students and their teachers creates a positive classroom environment where both are encouraged to become partners in learning.

Across school sites, there is a great deal of emphasis directed toward developing and implementing a wide variety of instructional techniques and strategies that promote a high level of interaction and performance. Instructional strategies range from the traditional, teacher-directed lectures and discussions to innovative, group problem-solving assignments that encourage cooperative learning.

Fostering Independence

Although Macy teachers place a high premium on cooperative and competitive learning experiences, they also acknowledge the importance of encouraging students to accept responsibility for their own learning. Macy students say they are not "spoon fed" material or assignments. Macy teachers and staff are aware of their students' interests and aspirations and provide opportunities for individual research and internships.

Hands-On Learning

In many Macy classes, students become active learners as they engage in hands-on activities that require them to apply theories and principles discussed in class to laboratory or real-life situations. In Alabama, for example, a laboratory van travels to schools and provides students the opportunity to use highly sophisticated laboratory equipment to study DNA molecules.

For many Macy students, these experiences are highly engaging because they make learning come alive. They introduce and reinforce skills that are critical to students' success in undergraduate and graduate level work in the medical sciences. Hands-on learning underscores the importance of developing competency, precision, and higher order cognitive skills.

Highly Integrated Learning

Learning in the Macy program is not divided into distinct instructional territories but is highly integrated across content areas and grade levels. What is learned in one course has immediate application in another. A ninth grader at Hillhouse High School states, "I think we're learning all the subjects in one class." This integrated approach helps Macy students see relevance and value in what they're doing and learning; it expands their perspectives beyond the traditional math, science, or English classroom to the world-at-large where their success may hinge upon the mastery and application of multiple, interrelated skills.

Monitoring and Evaluating Progress

Frequent monitoring and evaluation of student progress through formal and informal means is a critical component of the Macy program. Macy students report that they have more tests than their peers in non-Macy classes and that their tests are harder. They claim they have considerably more homework than non-Macy students and that their homework assignments are often graded.

Continuous monitoring and frequent evaluation also help teachers make informed decisions about pacing instruction for the whole class and whether or not an individual needs help. Macy teachers claim that frequent evaluation and feedback offer students a sense of focus; they see what's important and they have a chance to clarify misunderstandings. They have an opportunity to apply what they've learned about a subject and the test-taking strategies they've acquired through special Macy workshops. Most importantly, however, teacher evaluation and feedback tell students how they're doing in a particular class and that someone cares about their progress and about them as individuals.

Managing Students and Instruction

A goal of Macy teachers is to maximize the amount of time students are engaged with the subject matter and minimize the time spent on administrative details and discipline. In Macy classes across school sites, the portion of the period devoted to instruction almost always exceeds 80 percent. Both students and teachers appear prepared to learn and seem committed to make the best use of their time together.

Issues and Conclusions

This examination of the Macy high school programs reveals an educational improvement effort that clearly is producing some very impressive results. As indicated previously, however, these programs are not magic formulas which will resolve all the problems plaguing today's high schools. The programs might simply be characterized as "good schooling." But unfortunately, this level of "good schooling" is too often a rare occurrence and therefore, the Macy programs are worthy of some keen attention from the larger education arena. As the nation's secondary schools struggle to foster improved achievement among their students — especially poor and minority students — the Macy programs should stand as a model for widespread replication.

However, all too often replication attempts fall short of the mark because they employ too literal a translation of program components without paying sufficient attention to the dynamics which made the original effort successful or to the issues which invariably surround the intended school improvement measure.

Some of the important issues and program dynamics to be considered are:

- admissions criteria and program choice: Can program success be explained by the "kind" of students who choose or are selected to be in the programs? (Athough each of the programs is regarded as an honors course of study, this seems to be due more to the curriculum rigor than the academic level of the students coming into the program. A general descriptor for the scholastic "class" of the entering Macy students is "third quartile". That is, these students fall along the 50th to 75th percentile range in their achievement levels prior to admission to the Macy programs.);

- the role of student motivation (A key factor in the Macy programs' success appears to be the concerted effort to maintain and promote high aspirations and academic self-confidence);

- the equity of resources: Do the Macy programs and similar efforts drain financial and human resources away from other needed educational services? (Currently, as the Macy programs receive a good deal of their financial support from an external source — the foundation — the required funds are not directly competing with other school programs for financial allocations from the school administrators. And, as the programs have increasingly brought improved student achievement results, most administrators have viewed their financial investments in the program as yielding a substantial return.);

- the program's impact on the rest of the school (Macy participants contend that the program enhances the total school by emphasizing academics and providing additional training for teachers who serve all students);

- preventing program stagnation: How can programs like Macy be institutionalized and simultaneously retain their energy and momentum for achievement? (The Macy programs, after almost a decade of operation in some sites, appear to have not only staved off stagnation, but actually gained momentum. The programs do not grow stale because the teachers can — and do — continually update and revise the program components. The program is rarely the same from year to year.)

What factors appear to play the most significant role in the Macy programs' success? Identifying these elements and the dynamics under which they operate will be key any effort to replicate the program in other schools.

The major components of the program which are fundamental to the Macy students' accomplishments are: a rigorous curriculum which is "evolving" and tailored to meet the particular needs of the students; extensive academic support which form an "academic safety net" so students are afforded many opportunities to meet the academic demands of the Macy curricula; a supportive school culture which conveys and fosters a set of norms, expectations and behaviors related to student achievement; direct adult involvement with the academic and personal lives of the students; a continuous emphasis on professional development for teachers and teacher participation in program decision-making; a wide variety of instructional techniques and strategies, and; enrichment activities which supplement school-based learning with "real world" experiences.

Despite the importance of each of these program elements, individually they are not as effective as they are when integrated into a total program design. It is the mutually supportive nature of these elements which account for the Macy programs' effectiveness. Over time, the Macy programs have forged a winning combination of interdependent affective and academic strategies which have led to a remarkable record of student success. The demanding curriculum by itself is not enough to produce these results and neither is a caring environment. The curriculum is enhanced by the substantive academic support activities. The guidance component augments the coursework and the career exposure, college visits, guest speakers and all the many enrichment activities undergird and reinforce all aspects of the program. All program activity, in fact, is pointed in one direction: to help students achieve.

It is this singular focus and the mutually reinforcing nature of the program elements which seem to provide students with the desire and self-confidence as well as the abilities to stretch for — and attain — higher scholastic achievement.

The Autobiography of an Incoming Macy Program Freshman

The thing I like best about my physical description is that I have smooth, wavy black hair, a set of shiny, sunshine eyes, coarse skin, but spongy lips, a big chubby figure, a sharp nose, small but round head, shoulders like a horse, hands like a wrestler, and a big, broad chest. I'm a male, 13 years old, and I am about six feet tall!

When I enter a new school such as A. Philip Randolph, I tend to be shy and uncomfortable, but when I get to know everyone, you will like me very much. You will see that I am mature, faithful, truthful, helpful and have a humorous sense of humor. I tend to be forgetful, careless and lazy but that's normal for me or any other teenager growing up and trying to become much more organized.

My background is an unforgettable experience for me. I was born in Harlem Hospital in New York City. In the years I went to elementary and junior high school, I had teachers who cared for me and thought the whole world of me. Now I'm looking forward to a new school to meet new friends and an understanding principal with a thoughtful and helpful staff.

After I finish high school I would like to go to Yale University. Going to Yale will be another step for me to confirm my dream of having my own engineering company. I would also like to have an engineering school to teach youngsters the basic skills of engineering.

To conclude my autobiography, I would like to say that I hope I have friends who don't look at my physical appearance as a fault, but look at my helpful, truthful personality. As for my background, I would love to pass that on to my grandchildren and let them look back with me on my experience of life and what I accomplished.

Completed as a writing assignment during one of the summer orientation camps for new Macy students.

Introduction: No Magic Wands

This report is not about miracles. It is not an accounting of troubled schools which, through some wondrous simple formula, have cured all their ills. And even given the current commercial success and popularity of stories which detail the admirable feats of individual educators, this is not another "Lean on Me" or "Stand and Deliver."

The Macy high school programs which are the focus of this report are, nevertheless, success stories. But these are success stories born from concerted, collective efforts. They are efforts which involve a great deal of will and commitment, some disappointments and setbacks, and an ongoing struggle to give more than 3,100 teenagers a measure of hope, strength and ability that their unforgiving circumstances and environments might ordinarily, easily deny them.

As this document details, the Macy high school programs, located in sites as diverse as an Arizona Indian reservation, New York City's Harlem, and rural Alabama, represent some exemplary work in unraveling the knotty problems facing American high schools today. These programs, which serve primarily minority and poor students, also demonstrate the complexity of increasing student achievement, fostering school improvement, and sustaining forward progress. But most importantly, the Macy programs clearly send a most compelling invitation to join in this urgent, sometimes confusing, quest for educational quality: as the Macy students are helped to develop an unobstructed vision of their individual value and capabilities, external observers get glimpses of a cumulative human potential which is staggering. Only the most jaded could fail to be impressed by such a diverse collection of young people awakening to their own possibilities.

The programs described in this document do not have sole proprietorship on expanding the horizons of children. Other schools across the country labor at this task -- and also succeed -- every day. It is, unfortunately, also true that many more schools are not particularly successful in handling this job or, for that matter, the other, more traditional, schooling roles such as teaching reading, writing, and computing skills.

This document is a reporting of and celebration of success, not another treatise decrying the failures of schools. However, that success must be placed in context. Thus, a brief overview of the national educational picture related to minorities and poor children, their personal goals and their preparation for entering and completing college serves as a useful point of reference.

The National Scene

In the last decade, American high schools have been especially criticized for an array of shortcomings. The colleges and universities contend that large numbers of the incoming students are incapable of handling postsecondary work. The nation's employers complain high school graduates are so deficient in basic skills that the private sector must spend millions in training programs just to bring new workers' skills up to minimally acceptable levels. Some suggest these factors contribute to the growing gap between rich and poor and, thus, threaten our democratic institutions.

Historically, the public has viewed high school as the last stop before one enters the "real world" of work or embarks upon advanced study and training in preparation for future work. Yet, many young people, equipped with their diplomas, exit high school unprepared for work or higher education. According to the Young Adult Literacy Assessment study, administered by the National Assessment of Educational Progress (NAEP), average literacy levels of 21 to 25 year olds were found to be inadequate "for maintaining world leadership in a changing, technological society."

Equally bleak are recent studies of high school students which reveal dramatic deficiencies in geography, history, civics, and especially mathematics and science. The myriad of reports, research and commission findings issued during the 1980's have underscored the failings of public schools, especially at the secondary level. With each successive report, the message was broadcast more urgently: the nation's economic and democratic stability is dependent upon the educational preparedness of American children.

Minority Achievement Gains and Gaps

Even greater alarms have been sounded when the academic achievement records of poor and minority students are examined. Although the graduation rate of African American and Hispanic high school students has increased substantially since 1965 and the achievement levels of these students have shown some steady gains, the scholastic gaps between minority and white students remain unacceptable if the nation is to stave off the dire predictions about economic and social decline at the hands of poor schooling.

Upon closer inspection of today's high schools, the view of education for American minorities often gets no brighter. As reported in a March 1990 College Board and Council of Great City Schools study, "Minority Student Access to and Preparation for Higher Education," African American and Hispanics are more likely than white students to be enrolled in special education programs and less likely to participate in gifted and talented programs. Similarly, minorities are under-represented in academic or college preparatory courses of study and over-represented in vocational education programs. The study findings also reveal that "African American high school students also take fewer years of coursework in mathematics, physical sciences, and social studies than their white counterparts. Hispanics are more likely to drop out of school than African Americans who, in turn, are more likely than whites to drop out."

A Mixed Reading on College Prospects

The state of postsecondary education for minority students is a combination of good and bad news. In 1986, colleges experienced the largest minority enrollment in history. However, the proportions of minority students enrolling in college have actually declined since 1976, according to the 1990 report, "Education That Works," published by the Quality Education for Minorities (QEM) Project. In 1976, 36 percent of Hispanic high school graduates and 33 percent of African American graduates enrolled in college. In 1986, the figures had dropped to 29 percent for both Hispanic and African American high school graduates.

Even these diminished numbers are deceptive, contends the QEM report. Minority students are much more likely than white students to attend two-year institutions. "This differential is extremely important," the report states, because "many students in two-year colleges are in nonacademic or part-time programs. Transfer rates to baccalaureate institutions [from two-year schools] are low and hard to determine accurately; estimates range from between 5 and 25 percent."

"It's like when you look out on the skyline, you can see the buildings; but behind them you can see the sun. My grades are the buildings, but beyond I can see a good career and my college and all that kind of stuff."

Dewitt Clinton
Junior

Finishing College is Another Story

Enrollments only give one perspective on colleges' track record with minority students. Retention, that is, staying in college and graduating, offers another discouraging view. White students earn bachelor's degrees at twice the rate of African American students and triple the rate of Hispanic students. Close to one million undergraduate degrees were conferred in the academic year 1986-87. Of that number, only 5.7 percent went to African American students and 2.7 percent were awarded to Hispanic graduates.

Minority students pursuing graduate degrees and entering professional schools will find their ethnic groups even more under-represented. In 1987, almost 300,000 master's degrees were awarded. African American students received 4.7 percent and Hispanics accounted for 2.4 percent of the total. The 34,000 Ph.D's in the same year were distributed as follows: whites, 71.7 percent; Hispanics, 2.2 percent; American Indian/Alaska Natives, 0.3 percent; African Americans, 3.1 percent; Asian/Pacific Islanders, 3.2 percent; and 19.4 percent were received by students from countries other than the United States.

This graduate school picture may be improving slightly, however. A newly released assessment by the Council of Graduate Schools and the Graduate Record Examination Board shows that in the years 1986 to 1988, the number of African Americans enrolled in graduate schools increased by nine percent and the number of Hispanics rose by 8.4 percent. Despite these marginal gains, the proportion of minorities entering graduate school still lags far behind the enrollment figures for white students and for non-U.S citizens.

As the QEM report duly observed, "It is clear that the higher up the educational ladder one climbs, the fewer black, brown or red faces one sees."

Changing the Face of Health Professions

Professional schools, particularly those in health fields such as medicine and dentistry, also reflect the under-representation of minorities found all along the upper strata of the educational spectrum. This fact has not changed substantially in the last thirty years.

In the mid-1960's a number of targeted efforts were launched to increase the numbers of minorities entering professional health careers. The Josiah Macy, Jr. Foundation, chartered in 1930 as a private, New York City-based philanthropic organization, was one of several groups which refocused its resources to support post-baccalaureate programs committed to enlarging the enrollment of minority students in American medical schools.

Through its Minorities in Medicine Program, the foundation targeted the needs of African American, Mexican American, Mainland Puerto Rican, and Native American students. The foundation supported activities at colleges and medical schools which offered guidance and counseling, offered remedial education in science, and strengthened study skills for these minority students.

Minority enrollments did begin to inch upward, but by 1974, they leveled off and then dropped again. The enrollment of African Americans in medical schools grew from less than 2 percent in the 1960's to a high of 7.8 percent in 1974. The percentage fell to 6.8 percent in 1983 and rose again only to 7.3 percent in 1987. This percentage would be even lower if it were not for the significant numbers of African Americans who attend medical school at historically black colleges and universities, such as Howard, Morehouse, Charles Drew, and Meharry.

One explanation for this fifteen-year stagnation is that the pool of applicants has remained stable and the numbers are inadequate to significantly affect the number of medical school acceptances. Since 1975, each year only about 3,000 minority students even apply to medical schools. In recognition of this problem, the Macy Foundation altered its strategy and began to focus its efforts on significantly increasing the number of academically prepared minority students who pursue and complete an undergraduate degree.

In 1980, the Macy Foundation began to shift support to honors-level high school projects that are designed to provide a rigorous course of study to selected educationally and economically disadvantaged students. The goal was to provide minority students with the academic preparation, support and enrichment they needed to compete successfully in postsecondary institutions.

Genesis of the Macy High School Programs

To launch the new program approach, the foundation intentionally sought public high schools with poor performance records located in sites populated by poor and minority families. The schools were chosen on the basis of the interest and commitment of the principal, faculty, and school authorities in introducing and developing a top-notch honors program predicated on high expectations of student performance.

In 1981, the first four year grants were awarded to support programs at A. Philip Randolph Campus High School in the Harlem section of Manhattan, New York; Clara Barton High School for Health Professions in Brooklyn, New York; and five rural high schools in western Alabama, under the direction of the University of Alabama. In 1986, a second group of four-year grants was awarded to support programs at DeWitt Clinton High School in Bronx, New York; James Hillhouse High School

in New Haven, Connecticut and Tuba City High School, located in Arizona on the nation's largest Indian reservation. Also, the original sites were awarded continuation grants and the University of Alabama expanded its program to include 29 additional schools spread across nine counties.

The Macy Programs Today

Currently, the Foundation supports Macy Programs in 39 schools (the Alabama programs are now operating in 34 schools) by providing funding for curriculum development and enhancement; teacher and staff training; student enrichment activities; summer academic camps; prep classes for college entrance exams; and individual tutoring.

As this report details, the students involved in these programs are a diverse group, but they do share some common traits. Nearly all have never had the advantage of financial security in their families; almost 70 percent are minorities. At two of the sites, two-thirds or more of the students' parents were born outside the United States; for a substantial number of these students, English is the second language spoken in their homes. At the New York City sites, from 37 percent to 56 percent of the Macy participants come from single-parent families.

These are student characteristics found in thousands of classrooms across the United States. However, a different variety of commonly shared traits also are observable among the students across the Macy programs -- attributes which may not be seen so frequently in other schools. The excitement about learning and the expectations of success are palpable in these settings. The students have a strong identification with the goals of these programs and often appear hungry to take on the challenges of a more rigorous high school career.

After nearly a decade of operation, the Macy high school programs appear to be reaping the rewards for which they were created. Scholastic achievement is up; college acceptances are commonplace; Macy graduates appear to have a "staying power" in the colleges of their choice and are pursuing science or health-related studies in greater numbers.

To examine these phenomena at close range, the Macy Foundation hired The McKenzie Group, a comprehensive educational consulting firm, for an eighteen-month study of the high school programs. The purposes of this study were:

- To determine the characteristics of the students who participate in the Macy-funded programs at each of the six project sites;
- To describe and evaluate the strategies employed by each site to improve the curriculum and instructional program offered to Macy students;

- To assess the quality of the curriculum, instructional programs, instructional programs, and student support services provided at each of the sites;

- To determine the benefits accruing to those students who participated in the program;

- To compare the school performance, academic achievement, and access to college of participants in the Macy programs to non-Macy students who are similar in background and entry-level academic performance;

- To determine the important lessons learned from these demonstration programs, their implications for increasing the number of minorities preparing for careers in the medical and health fields, and the replicability of the programs in other settings.

With the guidance of an advisory committee comprised of leading national educators and research experts, the firm has prepared this report of its findings.

The report, Expanding Horizons, describes the Macy program in action. It focuses on the Macy students and their teachers, counselors, administrators who exhibit a singular commitment to learning, achieving and succeeding. The report examines the curriculum, instructional strategies, academic climates and school cultures which are central to the programs' operations. Expanding Horizons also explores the staff members' visions for and expectations of their students. And most importantly, the report attempts to convey the excitement and needs, the energy and apprehensions, and the aspirations and achievements of the Macy students.

As the following pages reveal, the Macy Programs were not overnight successes. They were developed painstakingly, sometimes by trial and error, by school administrators, teachers, and university-based partners who have a dogged determination on behalf of their students. The programs do have some rough spots, areas needing attention. Nevertheless, these efforts carry powerful messages to others laboring to find ways to expand the horizons of the nation's children.

A most abbreviated summation of the Macy high school programs might well be: It hasn't been easy. It isn't perfect. And it certainly wasn't magic. But it works.

Lila Thompson:
"Just doesn't have time to get in trouble."

Playful, cheerful, fun, and funny describes Lila Thompson, a ninth grader in the Macy program at a high school in New Haven, Connecticut. She wears her feelings on her face and in her voice.

Yet Lila is also upfront--she'll be the first to say she has a temper and that this sometimes gets her in trouble. While she may be stubborn at times, especially with her younger sister, she doesn't get frustrated easily or complain. There is a childlike innocence about her; she seems to possess that rare gift of enjoying the moment and getting as much out of it as she can. According to her mother, she's a go-getter.

"A lot of other kids are doing a lot of other things, but [in her journal] Lila wrote that she just doesn't have the time to get into trouble. Her priorities are very good for a fourteen year old. She has her head on straight," says a Macy teacher.

Having a clear sense of direction is one thing; accomplishing goals is another. Lila not only has her sights set on college, she also has the drive to get there. Mrs. Thompson says Lila sets high standards for herself. "Anything she's interested in, she'll go for it, especially college," comments Lila's mother.

Besides a strong inner drive, Lila also has a solid network of encouragement. She knows her teachers will help if she has problems. "They talk to us privately...they sit down and talk to us about our problems," she says. In addition, she knows her teachers will arrange for a tutor if she is having trouble in a subject. According to Lila, her trigonometry teacher has been particularly influential.

Lila also sees her peers as helpful. A lot of her friends are in the Macy study skills elective, and they encourage one another. "If someone is messing up, we tell them, 'Come on, you can't mess up on all of us. We're in this together,'" says Lila. And while other ninth graders who aren't in the Macy program may tease her about having an extra class for the next three years, Lila chides back, "Aha, we're going on trips and you're not. We get out of school sometimes."

Mrs. Thompson and Macy staff believe that Lila would still be Lila if she weren't in the Macy program--she'd still have her same personality and be highly motivated; she'd still get along. Yet one Macy teacher points out that without the program, Lila's "band of experiences" would be much narrower. She says being in the Macy program offers Lila a lot of opportunities to go in diverse directions.

Lila, on the other hand, feels she has gained valuable skills and knowledge from her participation in the ninth grade Macy study skills elective. She feels better prepared for college--not only in academics but in a practical way as well. Her teachers have made college--the experience and the expense--more of a reality for her.

She has also developed critical interpersonal skills, such as learning how to work in a group and how to control her temper. Finally, Lila says she has discovered that she can do something other people can't. In her sci/math class, she helped a friend who didn't understand the material. "She did learn something, and I learned that I can teach," says Lila.

The Macy Students

Shawna Dalton is a senior of top academic standing; as a sophomore she became a mother. She'll be attending Johns Hopkins University in the fall.

Petra Armilla's family of 13 children came to the United States only six years ago when she was 11. She's lived with one relative after another and currently has an hour-long commute to school. For the fall term, she earned a 95 in Advanced Placement biology; a 91 in AP calculus, 97 in economics and 97 in English literature.

Billy Parmley is in the top five percent of his class, but his teachers contend he could do even better if not distracted by a difficult home life. His mother makes jewelry and Navajo crafts to sell to tourists; his father is an alcoholic.

Kent Marshall is a writer, musician and serious student of genetics. His parents have lived in rural Alabama all their lives; they have strongly encouraged his academic pursuits throughout his school career. Last year, he wrote a novel; he hopes to complete his second by the end of this year -- his freshman year of high school.

This sample of students' backgrounds conveys the kinds of teenagers one finds among the Macy participants. Among the 3,100 students enrolled in the Macy high school programs in the 1988-89 school year,

the cultural differences and family backgrounds vary significantly, but few could be characterized as fitting into any traditional pattern.

Although the notion of the safe and secure, two kids -- two parents family of the 1950's is outmoded for a good portion of all American children, the "Leave it to Beaver" portrayal of family life is especially alien to most of the Macy students.

Ethnic Diversity

One very significant characteristic of these students is their ethnic and racial backgrounds.

With the exception of the Alabama programs, minority students comprise more than 90 percent of the Macy program enrollments. For example, 46 percent of the Dewitt Clinton Macy students are Puerto Rican or of another Hispanic background; another 46 percent of the students are African American. In the Macy program at Hillhouse in New Haven, 92 percent of the students are African American; 4 percent are Puerto Rican. Ninety-five percent of the Tuba City, Arizona students in the Macy program are Native American. In the rural, economically depressed counties of western Alabama where 34 schools have Macy programs, 38 percent of the participants are African American; 62 percent are white.

Enrollment in Macy Programs, Reported by School and Ethnic/Racial Group Membership, Fall 1988

	African American	Puerto Rico	Hispanic	White	Native American	Other*
Randolph	71%	12%	12%	1%	2%	2%
Barton	72%	10%	10%	1%	--	7%
Clinton	46%	26%	20%	1%	1%	6%
Hillhouse	92%	4%	--	--	--	4%
Tuba City	--	--	2%	3%	95%	--
Alabama	38%	--	--	62%	--	--
All	49%	6%	5%	31%	5%	4%

* Includes Asian American, Chicano, Pacific Islander, and other ethnic groups.

A Majority of Females

Two-thirds (67%) of the Macy students are female, a fact that is both encouraging and troubling to program administrators. On one hand, the Macy programs are not experiencing the traditional under-repre-

sentation of females in math and science courses of study. Thus, the Macy programs are helping to infuse the college pipeline with more female students who have career aspirations in historically male-dominated fields.

On the other hand, however, given the predominance of minority students at all program sites except Alabama, program administrators are concerned that more minority males are not in evidence on the Macy enrollments. They worry that minority males either have not been sufficiently encouraged to apply their talents in this more demanding school program or have not been adequately prepared in earlier grades to meet the programs' admissions criteria.

Only in the Alabama programs (which have a 62% majority of white students) do the number of male students exceed 40 percent. Of the entire Macy population, about 20 percent are minority males. At Clara Barton, a formerly all-girls school which turned co-educational in 1973, the percentage of males is only 17 percent.

Cultural Differences

For the parents of many Macy students, the United States is a second home. At Dewitt Clinton, more than 80 percent of the Macy students' parents were born outside the country. At Barton, nearly three quarters of the parents are not native born. The other New York Macy program, housed at A. Philip Randolph in the Harlem section of Manhattan, reports that 44 percent of the Macy parents are not American-born.

Given this, the frequency of Macy homes where English is not the primary language spoken is not surprising. Over half the students at DeWitt Clinton come from settings where English is the second language. At the other New York sites, one-fifth to one-third of the students are from homes where another language (usually Spanish) is dominant.

In addition to the substantial percentage of the New York students who can be considered language minorities, it is estimated that more than half of the Macy students in Tuba City come from homes where Navajo is the dominant language. This figure is difficult to confirm. Official reports list this number much lower (about 8%), but the high school's administrators suggest that the use of Navajo as the principal language in the home is under-reported.

Among the 1990 graduating seniors in all the Macy sites, more than one in three (35%) report that a language other than English was their first language spoken.

A great deal of research has indicated that cultural differences between students and their schools appear to play a crucial role in affecting the performance of minority students in math, science and

"Macy teachers really take the time to explain things to you. Plus, they're your friend, too. Say you need help, they won't just give you the answer. They'll sit there and ask you questions as if they didn't know [the answer] either."

Hillhouse Junior

engineering studies. A 1984 Ford Foundation report, for example, concluded that language ability was an important factor in the poor math and science performance of many Hispanic students. Other studies revealed that bilingual Hispanic students encounter unique barriers to learning math because word and logic problems often involve advanced understanding of English semantics (Mestre, 1986). Similar difficulties have been observed in studies of Native American students (Cheek, 1984).

Percent of Macy Students from Homes Where English is Not the Native Language Spoken, Fall 1988

	English	Language Other Than English
Randolph	80%	20%
Barton	68%	32%
Clinton	48%	52%
Hillhouse	97%	3%
Tuba City	92%	8%*
Alabama	99%	1%

* School administrators estimate this figure at about 50%

Economic Factors

A substantial portion of Macy students come from families which exist at or near the poverty level. The 1990 graduating class of Macy students reported their family incomes in the following way: 19 percent with incomes below $10,000 per year; 48 percent with incomes between $10,000 and $25,000 per year; and 29 percent with incomes exceeding $25,000 each year.

A more detailed picture of the students' economic backgrounds is revealed by examining the percentage of Macy students who qualify for free or reduced price lunches. In 1988, families of four with an annual income not exceeding $15,145 qualified for free student lunches. Students from four-person families with incomes of $21,553 or less per year were eligible for reduced price lunches.

In the New York City Macy programs, more than half the Macy students qualified under these criteria. At Barton and Clinton, almost two out of three Macy students were eligible for the subsidized lunch

program. Fifty-two percent of the Randolph students meet these income requirements.

At Randolph and Clinton, the percentage of Macy students qualifying for free and reduced price lunches was significantly greater than the proportion eligible from the entire school student body. At Randolph, 40 percent of the school enrollment was eligible, while more than half of the Macy students at the school qualified. At Clinton, 38 percent of all students had the qualifying incomes as compared to 63 percent of the Macy students.

In New Haven, almost a third of the Macy students are eligible for the lunch program. Among the Macy sites, Tuba City and the Alabama programs, have the fewest numbers of students who qualify; 26 percent in Alabama and 21 percent in Tuba City.

The socio-economic status of families has long been linked to student achievement. Although the degree of its effect on academic achievement continues to be debated, researchers conservatively estimate that at least ten percent of the variance in achievement can be attributed to socio-economic status (Bloom, 1986).

Family Structures

The dramatic rise in the number of single-parent households over the past two decades has been assailed as one of the greatest hardships with which today's American children must contend. Nationally, the num-

Percent of Macy Students in Single versus Two-Parent Families, Fall 1988

	Single Parent Families	Two-Parent Families
Randolph	48%	52%
Barton	37%	63%
Clinton	56%	44%
Hillhouse	49%	51%
Tuba City	26%	74%
Alabama	20%	80%

ber of one-parent households rose from 12.8 percent in 1970 to 27 percent in 1987.

The number of single-parent families among the Macy students at four of the six sites, however, far surpass these national figures. At Hillhouse, Randolph and Clinton, half the Macy students live in single-parent families. At Barton, 37 percent of the students come from homes where only one parent is present. Only at the Tuba City and Alabama sites are the Macy student figures in this regard comparable with the national numbers. One-fourth of the Tuba City Macy students live in single-parent homes and one-fifth of the Alabama students are members of one-parent households.

Parents' Level of Education

An additional insight into the composite picture of Macy students can be gleaned from an examination of their parents' levels of education. This factor -- parents' educational attainment -- has been demonstrated as a most significant variable in explaining differences in their children's motivation for learning and academic achievement. The educational level of students' mothers, for example, has been positively linked to more effective styles of parent-child interactions and greater communication of belief systems and expectations and specifically to students' persistence in scientific fields of study (Ware and Dill, 1986).

Similarly, research has indicated that minority students whose parents attended college are much more likely to pursue postsecondary majors in math, science and engineering than students whose parents did not go to college (Berryman, 1983).

In general, the educational attainment levels of the mothers of Macy students closely reflect the educational levels found in the overall American population. For example, the 1980 U.S. Census data indicate that about 10 percent of adult females nationwide are college graduates; likewise, 10 percent of all Macy mothers have undergraduate degrees. Similarly, 38 percent of the total female population graduated from high school and a comparable 35 percent of the Macy mothers earned high school diplomas.

However, only the averages for the entire Macy population measure up to the national figures in this regard. At two New York Macy sites, more than two-thirds of the students' mothers did not graduate from high school. Nationally, the percentage for adult females who did not complete high school is less than 40 percent.

The mothers of students at the Alabama and Hillhouse sites, on the other hand, show a college completion rate which exceeds the national percentage and correspondingly, only about 15 percent did not complete high school, a rate which falls considerably below the national figures.

Family structure also appears to play a role in student achievement. Several research studies have found that single-parent homes have negative effects on children's academic performance (Milne, 1986; Thompson, 1988).

Educational Attainment Levels for Mothers of Macy Students, Fall 1988

	Less than High School	High School Graduate	Some College	College Graduate	Graduate Degree
Randolph	24%	39%	22%	8%	7%
Barton	72%	19%	5%	4%	--
Clinton	66%	16%	9%	4%	5%
Hillhouse	15%	38%	24%	15%	8%
Tuba City	11%	37%	25%	10%	17%
Alabama	13%	42%	23%	14%	8%
All	31%	35%	18%	10%	6%

The consequences of these ranges of educational levels among the Macy parents are unclear. As subsequent sections of the report indicate, a key feature of all Macy programs seems to be an unusually high rate of parent support, if not involvement, in their children's educations. For example, the case studies of students at Clinton, where 66 percent of the mothers did not complete high school, reveal anecdotal information indicating levels of parental encouragement and support comparable to the information conveyed by students at the Alabama programs or the Hillhouse and Tuba City sites which have the highest percentage of mothers completing at least some college-level studies (about 50 percent).

The facts and figures about the Macy students' lives and backgrounds paint a fairly discouraging picture. Financially, most are poor or struggling. They live in either rural, underdeveloped areas or urban communities attendant with crime and drugs. They are far less likely to have both a mother and father present in their home than other youth and their parents' own success with their school careers is a mixed record of achievement and dropouts.

Numbers and data of this sort, however, can only answer one portion of the question: Who are the Macy students? Face-to-face encounters with these young adults gives the "flip side" of the record and this is definitely an upbeat tune.

Academic Standing

The Macy programs are four years of rigorous academic training, beginning with the ninth grade. Each Macy program site has admission criteria (These are explained more fully in the next chapter, "Their Program"). In general, those criteria are reading and mathematics abilities which are on grade level and about a B average in the eighth grade. But most Macy teachers, especially at the New York sites, contend that the B average is deceptive. A great many of the students have the required 80 or 85 grade point average (on a 100-point scale), but their higher grades mask significant deficiencies in basic skills.

Furthermore, two of the programs -- Clinton and Barton --recruit students who only marginally meet the Macy requirements. These "promise" students are admitted to the program because of factors other than academic records, such as motivation, study habits, and other less quantifiable traits.

Although each of the programs is regarded, by students and faculty alike, as an honors course of study, this seems to be due more to the curricular rigor than to the academic level of the students coming into the program. A general descriptor for the scholastic "class" of the entering Macy students is "third quartile." That is, these students fall along the 50th to 75th percentile range in their achievement levels prior to admission to the Macy programs.

Once in the program, however, the students are perceived by both teachers and non-Macy students as "the smart kids." In schools with other honors programs, they may not be the "smartest," but they are regarded as among the "best." Peer rivalry, however, in several sites puts a negative twist to this identification. Many Macy students report that non-Macy students view the program as one for eggheads and "nerds."

However, the Macy students, almost universally, reject the notion that they are smarter than their non-Macy peers. The only difference between Macy and non-Macy kids, one student noted, is that "we want to be in the program" and "we see the kind of benefits it [the program] can have for our futures."

A Tuba City junior in the Macy program explained, "Students in the regular program are as smart as we are; they just don't want to use it... Kids in the regular program don't realize they have to grow up... They're taking the easy way out."

Another upperclassman in one of the New York programs characterizes the differences between Macy and non-Macy students in this way, "If you're popular in high school, you'll be popular for four years. But we've got the rest of our lives to think about. Some teenagers, they only think about today. Macy kids, they're always thinking about tomorrow."

Hopes and Aspirations

Indeed, Macy students are thinking about tomorrow. One of the most striking characteristics almost all Macy students seem to share is their ability to articulate their personal and career goals. Although many of the Macy students do indicate that their careers of choice will be within health-related fields, others believe they will be taking different routes -- teachers, engineers, writers, etc. These students say they entered the Macy program realizing that the increased academic courseload would prepare them better for their college lives no matter what field they choose to study.

Regardless of the careers the Macy students see in their futures, they tend to speak about their adult lives in similar ways. Almost none of the students specifically addressed the personal financial gains which might accrue from becoming a doctor or scientist. Instead, the students were more likely to characterize their plans in terms of how they could use them to benefit others. Several of the Tuba City students, in particular, spoke of their intentions to come back to the reservation to serve the community.

While most Macy students indicate they had a sense of their future plans before entering the program, many attribute changes, redirections and refinements in these plans to their involvement in Macy. For some, this has meant aiming toward a particular specialty in medicine or science. For others, the changes are more dramatic. "Before Macy, I wanted to be a fireman, now I'm convinced I can make it as a doctor," said one Macy sophomore.

An Inner Drive

Although many Macy teachers comment that their students are not necessarily the most academically gifted students in their schools, they do believe that Macy students seem to have at least one distinctive and mutually shared trait which sets them apart from other students -- even before they begin their involvement in the program.

"The Macy students, even in the ninth grade, have a kind of inner drive that propels them," remarks a Clinton teacher. More frequently, the teachers and Macy administrators use the more pedagogical term -- motivation. The Macy students, they contend, come prepackaged

with it. Of course, they explain, the students' motivational levels vary from individual to individual. Regardless of the degree, however, Macy teachers are quick to distinguish Macy students by this trait and often maintain that their teaching is enhanced by it. "It's cyclical," explains one teacher, "they're excited about learning, so I get excited about teaching, and they get more excited about learning and so on and on it goes."

An Alabama teacher observes the same characteristic and explains it as "an innate determination to beat the odds -- even when the odds have beaten so many around them."

The importance of both motivation and high aspirations to academic achievement is repeatedly confirmed in educational research (Boekarts, 1986; Fuchs, 1985). One recent study found that student motivation was a more predictive variable for achievement than a host of family background and school context attributes (Fyans and Maehr, 1987).

The Macy students, therefore, present a mixed picture of hope and disadvantage. On one hand, they reflect many of the attributes often associated with diminished student achievement: lower socio-economic status, cultural barriers, single-parent homes and at best, average levels of parental education. While they are not often characterized as "underachievers," Macy program coordinators contend they also are not in the highest achieving ranks prior to entering the programs. The factor that does appear to set them apart is their high aspirations and goal orientation. As the following chapters detail, the Macy program with its rigorous, challenging courses of study and a wide array of support and enrichment activities appears to simultaneously capitalize on and reinforce the students' strengths (interest, self-expectations, motivation) and ameliorate some of the more negative family and economic factors which frequently portend lower academic achievement.

Ramon Salgado:
"You've got to work at dreams."

"...I came here and I found out what it was all about, and I was shocked. I wasn't expecting it [to be] like that," says Ramon Salgado, a Macy student in New York City. He says he wasn't really prepared in junior high; he didn't spend a lot of time studying. He adds, "I had this image of high school...I thought it was all freedom, do what you want to, come to class when you wanted--not that I was going to cut but that's how it's shown--another big place where you have all this freedom. I didn't think it was going to be hard..."

Now as a junior, Ramon has a different view. When he visits junior highs to talk to eighth graders about high school and the Macy program, he tells them, "You have two choices. Either you go the easy way and get through high school and not get what you really need to fight out there and later on not be able to cope with college. Or you do it the hard way and work yourself up and prepare yourself for college and make sure you have the material and the strength to make it through college." He explains further, "...Everybody strives for big dreams. But it's not enough to strive or dream, you got to work at it. They're [Macy staff] going to make you work for your dream..."

Ramon has a hard time expressing himself verbally, especially in writing, says one Macy teacher. "It's exciting to get things from him, to see how he thinks; but he's blocked in his expression by his lack of ability in writing in the English language," notes the instructor. As for Ramon's strengths, his teachers say he is very creative and original in insight. "Once he develops an opinion, he stays committed to it. He commits himself to an idea and sees it through, thinks it through," adds an instructor.

Currently, according to a Macy staff member, Ramon is working on the third revision of a long essay concerning American appetites, which evolved out of classwork but, at this point, is being penned voluntarily. Besides his fascination with American culture, Ramon is also interested in photography. He has large stamp and coin collections and says he is an animal lover, too. At his high school, Ramon belongs to the Aspira Club, an organization that supports and encourages Hispanic and other minority students to succeed and excel in the professional world.

To a large extent, the differences Ramon sees between the Macy program and the regular program pertain to his perceptions of his Macy peers. He says that Macy teachers aren't different; the students are. "Because we are willing to learn...and we are willing to apply ourselves, I think to them, it's a challenge. I see teachers try to do what they do with us with other kids and they see it, but they don't want to learn it," he explains.

"Here they give you a lot of opportunities," says Ramon, "if you can't make it this way, they'll help you make it another way." Ramon sees his teachers and Macy staff as being understanding and helpful. They push him. His physics teacher, in particular, exerts significant influence. "He has a way of acting in the classroom that he does not act outside class. He can be the sweetest person outside, but inside that room he is to teach and he makes everything so challenging that if you don't apply yourself in his class, you'll be lost," he states.

In addition, Ramon recounted that when he had to take summer school to stay in the Macy program, his counselor kept calling him to see how he was doing. Also, he said just before he had to take his Regents test that summer, a classmate called and offered to meet him at the library to make sure he learned the material.

Ramon says the Macy kids are a family. They go out together; they raid the library together. Apparently, they have a lot of fun. His friends outside the program, however, look down on the Macy program. Ramon says they are not taking school seriously and that some of them are just jealous. He, in contrast, takes school very seriously. "Nobody is going to give you anything," says Ramon. "You have to work at it. You get what you work for, and whatever you do and wherever you are and whatever class is the hardest, you have to try to be the best--especially when you are a minority and when you are not looked upon as being too bright..."

According to a Macy staff member, the counseling component of the program has helped Ramon tremendously. The instructor says, "This is a kid, who in the New York City system, without the added help from the Macy program, I'm almost certain, would have fallen through the cracks by now."

"He's not unique in the program. You have some kids who would do well under any circumstances, but you have a significant number who thrive because the support system keeps them from dropping all the way down. They get low and they get caught and they lift themselves back up."

Their Programs

In School Year 1988-89, over 3,000 students were enrolled in the six Macy program sites. A little more than one-half of the students are in the Tuba City, Hillhouse, and three New York City programs. The other half of the students are part of the Macy programs in 34 western Alabama schools. The total Macy enrollment has grown steadily, especially as the number of participating Alabama schools has increased and as the programs begun in 1985 have introduced new grade levels. Most Macy programs began with a small group of students in the ninth or tenth grades, and each year a new cohort of participants was brought into the program. As of 1989, all Macy sites have introduced a complete four-year program.

Macy Program Components and School Reform

A look out over the American educational landscape today reveals both wide expanses and small pockets of "school reform" activities. Fostered in large measure by the profusion of education treatises, commissions and studies of the 1980's, school districts have honed in on concepts such as "school-based management," "teacher empowerment," "school climate," "principals as instructional leaders," and "business and university partnerships."

Ironically, as the Macy high school programs were conceived --two years prior to the issuance of the report, "A Nation at Risk," which is

Macy Program Sites and Enrollments

	Location	Date Funded	Program Enrollment (1988-89)
Clara Barton High School for the Health Professions	Brooklyn, NYC	1981	400
A. Phillip Randolph Campus High School	Manhattan, NYC	1981	438
34 Schools in Alabama (program coordination by the University of Alabama)	Western Alabama	1981*	1,646
DeWitt Clinton High School	Bronx, New York	1985	310
James Hillhouse High School	New Haven, Connecticut	1985	147
Tuba City High School	Tuba City, Arizona	1985	163
TOTAL ENROLLMENT			**3,104**

* Five high schools participated in the initial grant award; program has been expanded to 34 schools.

widely credited for launching the latest wave of school reform -- many of these now commonplace notions of school improvement were already being built into the programs' design.

Specifically, from the outset, all the Macy programs were developed with the following basic components:

- An exacting curriculum with course requirements far exceeding local standards for graduation.
- Smaller classes, particularly for 9th and 10th grade English and math courses.
- A working relationship with a local institution of higher education to develop curriculum and design staff development activities collaboratively .

- A strong academic and personal support and guidance system for students.
- Student tutorial services and enrichment programs, including an extended school day.
- An emphasis on teacher development, specifically in instructional techniques proving successful with disadvantaged students.
- Direct teacher participation and decision-making in the programs' development and implementation.
- A leader at each program site with singular responsibility for directing and managing the program.

A current synthesis of thought on "what makes a good school" would also include parents who support the school program; good communications among staff, parents and students; high performance expectations for all children; a trusting social and academic environment; and evaluations of the school's success based on its student outcomes.

These elements also found a place within the Macy programs' approach. Some were present in the initial program plans (e.g., high expectations), others developed over time once signs of positive results were evident, and some emerged largely because key persons at each program site, especially teachers, brought to the endeavor a strong belief in the power of learning, an ironclad belief in young people and a dogged will to make it succeed.

Admission to the Program

Specific policies for admission to the Macy program vary somewhat from site to site. However, generally students must have an academic grade average of 80 or better and standardized test scores in reading and math which are on grade level or above. Teacher recommendations and some assessment of motivation and interest in science and math fields also are considered at some sites.

At the New York City schools, desire for spots in the Macy program is intense. In 1988, for example, more than 4,000 students applied for only 120 available spaces in the A. Philip Randolph program. Similarly, Barton and DeWitt Clinton each received over 2,000 applications for the 150 freshman and sophomore seats available at each site.

Randolph is an "open admission" school, reserving some of its spaces for students from the neighborhood; the other half are randomly selected from the city-wide pool of qualified applicants. Barton is an

"She was able to get involved, do research, work in groups, and get one-on-one attention. She's a shy person; [Macy] helped her to be more outgoing . . . It's enriched our conversations at the dinner table . . . we're able to hear what she's doing and this has been a real motivation to her younger sister."

Mother of a Hillhouse Senior

"educational options" high school and accepts students city-wide, based on a screening process. Half of Barton's students score "at grade level" on standardized tests, 25 percent have "below grade level" scores, and 25 percent have "above grade level" test scores.

Admissions Criteria For Entering Freshmen				
Program Name/Site	Reading and Math	Academic Grade Average	Teacher Recommendation	Other
Biomedical Science Preparation Program (Bio-Prep) University of Alabama Tuscaloosa, AL	9th Grade level	80	yes	Achievement test scores
Macy Bio-Prep Tuba City High School Tuba City, AZ	8th grade level in reading, math and English	80	yes	Assessment of student and parental interest in program
Health Sciences Pre-Collegiate Enrichment Program (PREP) James Hillhouse High School New Haven, CT	Varies	N/A	yes	Feeder junior highs recommend students; written parental commitment to program; assessment of academic motivation
Macy Medical Sciences Honors Program DeWitt Clinton High School Bronx, NY	On grade level (50th percentile)	80	no	Attendance and punctuality
Macy Medical Professions Program (M2P2) A. Philip Randolph Campus High School New York, NY	On grade level (50th percentile)	80	yes	Some spaces held for neighborhood students; majority selected randomly from city-wide pool of qualified applicants
Macy Medical Science Institute (MMSI) Clara Barton High School for the Health Professions Brooklyn, NY	75th percentile	85	yes	Students citywide apply to school and if accepted, screened for the program

Partially in response to the overwhelming demand for acceptance into the New York programs, Clinton recently developed the PROMISE program for students who do not meet the Macy academic requirements. Each year, 190 ninth-grade students are selected for the program and if they maintain a grade average of 80, they can enter the Macy program as sophomores.

The admissions process at the Hillhouse program varies from the other sites. Freshman eligibility is determined by a review of test scores, grades, and teacher recommendations, but a particular level of test score or grade average is not necessarily a factor in being accepted. Students must also supply a written parental commitment to the program. Hillhouse places a greater emphasis on identifying academic motivation as an entrance criterion than do the other programs. Consequently, according to program administrators, the standardized test scores in writing for freshmen can vary from the 25th to 90th percentile.

Many program administrators maintain that the stated admissions criteria give a misleading picture of the abilities of the incoming students. They contend that the assessment instruments used to determine students' reading and math abilities often inflate their achievement levels. Consequently, the administrators report that the "on grade level" reading and math scores for incoming Macy students frequently mask deficiencies in these key subject areas.

Despite the high level of interest in the programs now, in the first years of operation, some programs experienced difficulties recruiting students. A Tuba City student in the first Macy graduating class said, "When I got into the program, they [program administrators] were just looking for warm bodies." In Alabama, where academic tracking is customary, program developers sought out eighth graders who had been tracked into Algebra I.

Program developers at the sites admit that initially recruiting students can be a problem. "It takes a while," one coordinator said, "to develop a critical mass of students who are involved in the program so they can demonstrate the benefits to other students."

Students learn about the Macy programs in a variety of ways: through upperclass students, teachers, high school bulletins mailed to junior high families, and orientation nights held at feeder junior highs. The "word" on the Macy programs is transmitted in many ways with varying degrees of accuracy. Students tell others about how hard the classes are or how only "brains" are in the program. Paul, a Tuba City student recalls at an eighth grade assembly, the presenters said that Macy students would have a chance to go on a field trip to California. "That got everyone's attention," Paul says, "...100 or some students signed up."

A Demanding Course of Study

Central to each of the Macy programs is a demanding academic course of study. While each program site has developed -- and continues to refine -- its own course offerings and sequences, all Macy programs offer the following:

- four years of English, mathematics, science and social studies;
- two years of a foreign language;
- a continuing four-year emphasis on reading, writing and speaking skills;
- Advanced Placement courses in biology, calculus, English and social studies;
- formal preparation for standardized tests, such as the Scholastic Aptitude Test (SAT) and the American College Test (ACT);
- opportunities to participate in specially designed summer academic programs.

At all Macy program sites, the requirements for graduation far exceed their local school district's standards. At Barton High School, for example, Macy students are required to earn 11 credits more than either the city or state boards of education mandate.

In addition to an equally rigorous course load, Macy students at A. Philip Randolph Campus High School must successfully complete at least one college course and perform 80 hours of community service. To accommodate these additional course requirements, all Macy program sites have at least one extra class period per day. At Hillhouse, for example, the ninth graders use the mandatory extra period to take specially designed classes in study skills, scientific methodology, and problem-solving designed and taught by an interdisciplinary team of teachers. In the tenth grade at Hillhouse, the additional class period is used for SAT preparation and career counseling courses.

As detailed in the following chapter, Macy students take considerably more coursework in mathematics and science than the average American high school student. Furthermore, the Macy students' curriculum greatly exceeds the course requirements found in schools serving similar populations of economically disadvantaged and minority students. For example, as detailed in the next chapter, two-thirds of Macy students take four or more years of science, compared to only 39 percent of other college-bound students across the country.

Just as the quantity of required courses in the Macy programs surpasses most high schools and even other types of honors-level programs, the kind and content of the courses differs as well. For example, Macy freshmen at Tuba City High School take a combined biology and chemistry course and sophomores take an intensive biological chemistry course. Other classes, more commonly found in college course guides, such as genetics, bacteriology and neurology are offered as a part of the Macy program at A. Philip Randolph High

School. (Additional details on Macy curricula and course sequences appear in the "Their Teachers and Instruction" chapter.)

An Array of Services and Activities

If rigorous academics are the heart of the Macy program, then the satellite of supporting services and enrichment activities is the soul. As subsequent chapters detail, each Macy program has a wide range of academic, social and personal guidance operations -- all focused on providing a "safety net" to ensure each student can succeed. This includes before- and after-school tutorials, college-sponsored study and research courses, summer academic camps, field trips for hands-on research experiences, SAT preparation classes, extra counselors, peer tutors, and financial aid counseling.

Furthermore, as new student needs arise or are identified by the faculty, the program staff usually finds ways to address them. At one site, for example, results from standardized testing showed that the students particularly needed to develop their writing skills. The solution came from the teachers with their development of a writing-across-the-curriculum plan to incorporate writing assignments and vocabulary skills into all subject areas, including math.

Anticipating and providing students with a comprehensive range of support and services is key to the programs' success. This approach also highlights a basic philosophical tenet of the programs: It is not enough to have a tough curriculum, to raise standards and penalize those who miss the mark; schools have an obligation to ensure students' achievement.

By adopting this approach, Macy programs take a page from the efforts of a small historically black college in Louisiana, Xavier University. Xavier, with an enrollment of about 3,000 students ranks second in the country in producing African-American medical students; 95 percent of Xavier students admitted to medical school become doctors.

One Xavier professor, J.W. Carmichael explained the college's extraordinary success this way: "The typical college faculty member sees his job as weeding out kids who come into science classes, in the interest of maintaining quality. "I could always drop people from a helicopter into Lake Pontchartrain and see how many drown. But what we do (at Xavier) is start from the shore and teach them how to swim." (New York Times, April 20, 1990)

The Macy programs also offer their students such "swimming lessons." Repeatedly, interviews with Macy students revealed that they attributed their academic gains to the various kinds of support the program provides. "The teachers seem to know if a student is having problems and they do something about it," said one student. Another

offers: "We [Macy students] do so many different things --internships, field trips, lab work -- it makes the courses real to us." And students at all program sites very often describe their Macy experience as "like a family."

Identification with the Program

This supportive environment is particularly critical to new students in the program. Each appears to go through a period of adjustment which, for many, can be difficult. Freshman and entering sophomores often must make decisions about balancing their academic demands with family obligations, other interests, social lives and extra-curricular activities.

For example, a student at one of the New York programs said that in junior high she would go home from school, watch television and forget about her homework until the last minute. "I really didn't take studying and my classes seriously," she said. It was just something I had to do." As a junior, she looks back to her entry into Macy and attributes her first experience with the program -- the four-week mandatory summer academic camp -- as the event that "turned her around." She recalls that it was there she learned how to study and became so intrigued with science. She says she also learned that no matter how hard something might seem, "[you should] always go for it because there's always a turning point" when it gets easier.

Students often speak of times when they had thoughts of giving up on the program. The work was so tough; they had to put in longer hours at school; they had more homework; non-Macy friends couldn't understand why they did it. In most cases, the students say, a teacher or counselor was there to help sort through the difficulties, to give the needed pep talk or just to listen.

As students build an identification with the program, the problems of making choices and prioritizing their activities are lessened. The many shared experiences -- field trips, study groups, college visits, joint projects -- help to build this important identification. Often, they report, they're known to others through their involvement in the program: "He's bioprep" or "She's a Macy girl."

Culture and Climate of the Program

Out of these various program elements has come the development of a distinctive, positive school climate within the Macy programs. As educational research has shown, school climate is an elusive but powerful concept which can affect a variety of student outcomes. In educational circles, climate has been used to describe such variables as communications between staff members and with students; shared

belief systems; physical comfort; building safety; sense of community; and collaborative organizational practices.

In the Macy settings, climate has more to do with human interactions and the presence of an intellectually stimulating environment than the material accoutrements of the school building or classrooms. A culture of shared beliefs, norms and expectations is developed. Students receive clear and consistent messages about the goals of the program. Adults associated with the program continually convey that although the work is difficult and the pace is swift, they know the students are capable of the challenge.

Students and teachers alike, point out the mutual respect they develop for one another. "Teachers here don't have the attitude, 'I know more than you so you had better listen,'" explained one Macy junior, "Instead, they say 'Here, let me help you understand.'"

The combination of strong academic content coupled with high expectations and a safety net of support helps students to feel -- and then become -- more capable. Repeatedly, students and teachers alike point out that Macy classes are "mutual explorations." Students contend there is a lot of peer pressure not to waste time in class, not to cause distractions. Teachers are apt to admit that preparing for a Macy class may take as long as "planning for four regular classes." The students will be ready when they come to class "because that's an expectation we've set," said one teacher, "So, in turn, the Macy teachers know that they too must be prepared."

Retention in the Program

Despite the development of a supportive atmosphere and a stimulating academic course of study, Macy programs -- particularly in their formative years -- have had some problems in retaining students in the program. Although gauging the retention rates of the programs is somewhat difficult because students who leave are then replaced with new entrants, program administrators estimate that between 10 and 25 percent of the students who enroll in Macy programs do not complete the full four years.

Several reasons may explain the program dropout rates which are highest for freshmen and sophomores. As program sites were initially developed, efforts were concentrated on offering a strong academic program. The supportive structures such as after-school tutorials, Saturday classes and a strong counseling component were not fully developed. Students enrolled in the groundbreaking classes, therefore, may not have had the level of assistance and access to the same resources that later classes have been provided.

Also program administrators believe that with experience, they have been able to rely on factors other than test scores and grade averages to

identify students with the more intangible qualities, such as motivation and untapped self-reliance which are needed to tackle the Macy curriculum.

Some program personnel also believe that the needs of ninth and tenth graders to assimilate into the program also initially were underestimated. At Barton, for example, prior to 1988, nearly 25 percent of the freshman and sophomore students were placed on academic probation and later dropped from the program. However, the project director and counselors, to minimize this loss, developed a policy on standards for retention. This identified specific actions to be initiated with students who were having academic problems. In addition to a series of counseling sessions with students and parents, special remediation strategies were developed. For example, students receiving a grade of 75 or less in the first semester of biology/research are now enrolled in an intensive 10-period per week biology class.

These lessons of experience appear to be working as most program sites now are reporting increasingly higher rates of retention at most grade levels. Barton, for example, shows a 90 percent overall retention rate for the 1988-89 school year and an 85 percent rate among ninth graders. Clinton, Hillhouse and Tuba City also are reporting fewer students leaving the program as a result of intervention activities they are now providing.

The Program's Pricetag

Foundation support launched the Macy programs with relatively small, four-year grants. Total foundation support is about $1.5 million a year for all program sites and the Macy Documentation Program, a series of research, data collection and program assistance activities. In 1989, foundation monies were allocated as follows:

Alabama	$275,000
Tuba City	162,538
Hillhouse	53,009
Barton	100,000
DeWitt Clinton	100,000
A. Philip Randolph	100,000
CAMPSTAR (one of the summer academic camps)	50,000
Documentation Activities	177,730

The foundation funds are used primarily to support the extensive staff development activities and some of the academic support and enrichment services of the programs. To a lesser extent, the grants have been used to offset a portion of the program administrators' salaries.

As programs were initiated, sponsoring school systems agreed to provide additional resources to the programs. For example, New York

City schools agreed to reduce class sizes in the Macy programs. The school systems also have funded many of the enrichment and summer activities as well as provided the additional counseling personnel.

Some sites, especially Alabama, have used their initial successes with the program to attract additional external funding for the program. The University of Alabama, which coordinates the Macy program in the state, has secured grants from the Kaiser Family Fund, the U.S. Department of Education, and the National Endowment for the Arts.

Total program expenses vary substantially across the sites. Tuba City, for instance, reported that their initial year of program operation was the most expensive because they had to significantly upgrade the quality of their science labs and equipment. The Alabama programs, on the other hand, are operated with only minimal costs per school. Above and beyond the foundation funds allocated for the programs and the external funding used for additional staff development activities, each school has run its Macy program with approximately $15,000 per year.

To give a more complete picture of the costs associated with each of the Macy program elements, the following estimated expenses are presented below. These estimates are based on operating a program of 400 students (100 in each grade 9 through 12).

Program Element	Approximate Annual Cost
Program coordinator & Counselor	$30 - $40,000
Reduction in average size of math and science classes from 30 to 22 students & extended school day	$60 - $80,000
Staff and curriculum development	$8 - $12,000
Field trips	$3 - $5,000
Summer residential program	25 - 35,000

Total program costs are difficult to project; they are dependent on the individual circumstances of each site and factors, such as prevailing salaries, assistance from a partnership organization such as a local university, and the particular need for the various program elements (e.g.- some schools may require fewer additional personnel to reduce class sizes to optimal levels).

Leon King:
"He likes his work to be right."

Last year Leon King, a ninth grader in the Macy program at a New York City high school, had an attendance problem; this year he rarely misses a day of school. He's a regular in the Macy office at his high school and in the after school tutoring session; yet, if it weren't for his size, you might not even notice him.

"Leon is a very quiet individual...a big, strapping guy," says a Macy English teacher. He is very serious, very patient, and very hard on himself. He also seems more mature; he doesn't cut up in class and gets his work in. He's willing to work a paper over and correct the mistakes; he just keeps going, not allowing himself to be stopped, says the instructor.

While Leon may not be as be as outgoing as other Macy students, he does respond well on a more personal and individual level. His English teacher believes that Leon tends to be more retiring because he wants to, not because somebody has embarrassed him. "I think he really feels imposing so he tries to hold back," she says. Another reason may be that he has fallen into a "bunch of chatty young ladies" she adds; there are only six boys in her class of 25. Still, he relates well with the other students, and they respect him says the teacher.

One reason he has earned their respect might be his academic performance. At present, Leon is in the top four students of his Macy class with a 94.6 average for the fall semester. His grades include 95 in English, 93 in sequential math, 97.5 in physical science, 98 in social studies, and 93 in Spanish. At his high school, he's involved in the African-American club and he participates in the STEP program on Saturdays.

Leon and his twin sister, who is also in the Macy program, turn fifteen this summer. They live with their mother and two other sisters. His older sister attends a technical school in the city. Leon's father died some years back. His mother supports the family with her work as a domestic. He wasn't sure about his parents' education.

Up to this point, Leon seems comfortable with his Macy classmates even though he doesn't seem to have bonded with any one peer or group. According to Mrs. King, Leon left his friends behind to enroll in the Macy program at his high school. He likes the Macy staff and especially the program director. "If the teachers see that you're making a special effort, they will...know you, remember you. And if something came up, you would have their support," he says.

Besides feeling the support of Macy teachers and staff, Leon also finds support at home. Mrs. King says that since both Leon and his sister are in the program, they have a lot to discuss. "There's an atmosphere," she says, "We talk a lot about it."

So far Leon has kept his family, school, and social life in balance. There don't seem to be any real pulls on his time yet. In fact, his mother feels he is more relaxed in this program than she has seen him in a while. "He just doesn't seem to get enough of it," she says. Leon says he gets most of his homework done during the afterschool study sessions since the teachers are available if he has a problem. He usually spends another hour on it once he gets home because he likes his work to be right.

While his focus is on school, Leon knows there are equally important things. For example, he explains, "...there's the Macy program and then there's what goes on in life. I try to recognize what goes on in the life of people...I want to make myself better but I always try to make myself aware of what goes on around me."

Leon, too, knows he can't be spending a lot of time with his old friends, some of whom he thinks are on the wrong track. "I have my own thing to do," he says, "and I have to do well..." At school, Leon sees kids who are willing to work and who are interested in going to college and making something of themselves. Leon knows if he has problems with school work one of the other Macy students would help him.

As for his future, Leon says there is no doubt about his going to college. He knows he wants to work in medicine. When he was in junior high, he was sick a lot and he watched Ben Casey. He set his sights on becoming first a doctor and then a pharmacist. Now, he's not sure. He realizes whatever professional path he chooses will probably require additional schooling beyond college, and, because of the Macy program, he says he's willing to make that commitment.

Their Success and Achievement

To fully assess the Macy high school programs' impact on the participating schools and students, both a macro and micro view are needed. On one hand, the success and achievement of the Macy students can be examined as a group: How well are all the students faring on standardized test measures? How many are going on to college? Are they pursuing health-related careers?

Equally important, however, is the close-up picture: How are the Macy students doing relative to their school communities' past records of student achievement? What progress is evident? Is the program making a difference locally? In what ways?

Given the diversity of the Macy program sites, this latter view is particularly illuminating. At one school, for example, prior to the implementation of the Macy program, the high school could not generate enough parent interest to form a PTA. Now, the principal reports, the PTA is not only meeting regularly, but the parents, despite severely limited means, are sponsoring picnics for the school and buying printed teeshirts for the math team. On a grand, national scale, perhaps this is not so astonishing. To that community and especially to those students, however, such activity is unprecedented and signals a measure of hope and pride which had previously been missing.

This chapter examines the Macy programs from both viewpoints. First, two of the program sites are examined at closer range, offering more detail on the impact of Macy program from the local school

perspective. Second, the achievements of the Macy students as a whole are described. In this section, an array of data including college acceptances, standardized test scores, the number and level of courses taken, grade-point averages and graduate survey results are presented.

In assessing the findings presented in the following pages, it is important to note that this study was somewhat constrained by factors not uncommon to evaluations of education demonstration efforts. For example, fully controlled comparison groups were not identified years ago when the Macy programs began. Such careful forethought is rare especially when the primary interest of the program is not research. So it is with this project. Consequently, the necessary reliance on existing data invariably reveals elements that are not always consistent nor available across the program sites (e.g., program sites employ different standardized tests or have not collected comparable outcome data from year to year). In addition, present comparison sources are also restricted to some extent inasmuch as some important features of disaggregated data are not available (e.g., a breakdown by grade level of national means on PSAT scores or the national percentiles by race and ethnicity on certain standardized test instruments).

In the absence of a double blind experimental design for this study*, it is therefore necessary to seek out a variety of perspectives or "windows" from which to observe these programs impartially. Such a compilation is presented here. In this assessment of the Macy programs, the cumulative view provided by this succession of data presents a clear picture of a praiseworthy educational effort which demonstrates the power and promise of all children and holds significant value for all those seeking to improve teaching and learning in this country.

Greene County, Alabama

The primary source of income for Greene County, Alabama is the local greyhound race track; some catfish farms and a few small cattle and timber operations are the only commerce in this rural area surrounded by the Tom Bigby and Black Warrior Rivers. The official unemployment rate is twice that of the nation (13.3% in February 1990) and most residents know that the official count is too low because it doesn't include so many of their neighbors whose search for employment ceased long ago.

The median family income is a little under $10,000 per year. More than a third of the county's 11,000 residents live below the poverty level. Only 40 percent of the adults over age 25 have high school diplomas.

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* As reported in the November 14, 1986 edition of the Journal of the American Medical Association, a controlled study of the Macy program in Alabama revealed significantly higher scholastic achievement among Macy students than two matched coherts of other students.

For many years, Greene County held the dubious distinction of being one of the five poorest communities in the United States.

The county's two high schools, Eutaw and Paramount, were among the first of the Macy program sites started in 1982. Eunice Outland, principal of Eutaw High School, believes that the Bioprep program has brought about a basic change in her student body. "The students view the program as something special and want to be identified with it . . . even those who might not want to put in the extra work."

She cites changes in the course selections of her students as evidence. "Before Bioprep, we had a hard time getting ninth graders to take algebra. Sometimes there were barely enough for a class -- only 18 or 20 students. Next year (School Year 1989-90), we have 113 entering freshman and 97 are taking algebra." Chemistry and physics formerly appeared on the course schedule at Eutaw every other year. Now, enough students are enrolling so these courses can be offered each academic year.

The positive results are showing up in the students' college entrance exams as well, according to the principal. Prior to the beginning of the program, only fifteen percent of the students taking the Scholastic Aptitude Test (SAT) scored in the school's top range of 790 to 900. In 1989, about twenty percent of the scores were in the 900 to 1300 range. (The national average combined SAT score was 901 in 1989.)

Joseph Coxwell, the Bioprep science teacher believes that one of the most noticeable program effects has been a change in student aspirations. Bioprep students believe that college is a realistic goal now, he said, and other students are catching on to the idea as well.

"Once we got the Bioprep students taking Physics, other students are saying, 'Hey, I could do that, and maybe I could go to college, too.' Everything reinforces everything else. When I come back from an in-service I don't just use what I've learned in my Bioprep classes, I use it in all my classes and I share it with all the other teachers."

Eutaw's teachers also believe the program will reap some long-term benefits for the students. "I can't say how many of these kids will go on to be doctors or health professionals, but what they are <u>not</u> going to be is important, too," said one teacher. "For a lot of them, the question is will they be third-generation welfare recipients? Since the program began, we've helped a lot of kids avoid that," he concluded.

At the other county high school, Paramount, the results are similar. Cleophus Gaines, Paramount's principal, feels the Bioprep program has lessened the impact of poverty on students. "The exposure they are getting is making their poverty less of a fault, less of a handicap... They have new goals. They are talking about college. They get to go up to the university and they hear a biologist talk and they wonder what it

"Teachers will ask questions to make sure you understand. If there is one student who doesn't understand, the whole class works together like a family to help him understand."

Clara Barton
Junior

would be like to be a scientist. Before Bioprep it wouldn't have occurred to them to even think about that."

The additional basics -- textbooks and an upgraded science lab -- which resulted from the Bioprep program also appear to have fueled Paramount's excitement about the program. The principal wishes there were more resources for these things but is encouraged by his parents' willingness to contribute what they can so the school can buy some more textbooks. He also cites two local businesses' sponsorship of the school math team as a local first and an indication of the pride the community is now taking in its students.

Paramount staff also credit the program with recent gains in test scores as well. The average American College Test (ACT) composite score for Paramount students in 1982 was 9; in 1989, the average was 14. (The national average ACT composite score in 1989 was 18.8.) Furthermore, the number of graduates going on to college has increased from 25 percent in 1982 to 40 percent in 1989.

The Greene County educators recognize that to some, ACT scores which still fall substantially below the national averages and college-going rates of 40 percent may not seem very impressive. But, they are quick to point out, "look how far we've come in just a few years and we're confident more progress is in store for our students."

One hundred students at Eutaw, Paramount and three other western Alabama high schools comprised the first Macy class. A total of 83 of those students completed the program and graduated in 1987. Two students joined the armed services and 81 enrolled in college.

Tuba City High School

With an enrollment of 1,300 students, Tuba City High School is the nation's largest secondary school for Native Americans. The high school is located on the largest Native American reservation, covering 25,000 square miles, an area about the size of West Virginia.

The entire area is sparsely populated; some high school students live hundreds of miles away and must board at the school. There is little economic development, few sources of employment and extensive poverty. For many years, the educational system on the reservation has reflected the difficult economic state of the community. In its 1988 budget, the Bureau of Indian Affairs (BIA) stated that education at its facilities are "alarmingly substandard." Although Tuba City High School is not a BIA-operated school, it has a predominantly Native American student population and has experienced many of the problems that the BIA schools are facing.

Students at Arizona BIA schools are performing at an even lower level than those at BIA schools in other states, according to the 1988 Annual

Report of the Tuba City Bioprep program. Only about 12 percent of Arizona Native American twelfth graders are performing at grade level, compared to about 18 percent in all BIA schools and 50 percent in the entire United States. One BIA study reported that in a section of the Navajo reservation, 55 percent of the eligible high school students and about 30 percent of eligible elementary school students were not even enrolled in school.

A 1985 study of three Navajo Reservation schools, including Tuba City, revealed that student achievement levels either remained stationary or declined during the first year of high school. The poor performance records of the reservation's high schools is compounded by the high dropout rate of Native American students who do enroll in college. For example, of the Navajo students from reservation schools who enroll at Northern Arizona University, a college with one of the nation's largest enrollments of Native Americans, only ten percent complete a four-year course of study and graduate.

Physically, the campus at Tuba City High School, however, belies this discouraging academic picture. The building is relatively new, equipped with two large gymnasiums, computer labs, a large art studio, and many other modern appointments. As described in the 1988 Bioprep Progress Report:

> "[The high school's] hallways are carpeted and the rooms are air-conditioned. The corridor walls are decorated with murals painted by students and faculty, which depict symbols of the traditional Navajo cultural heritage. In general, the passage of students in the halls is noticeably less noisy than in some urban schools. The softness and quietness of encounter is further braced by chimes or tunes signaling the end or start of a class period. The melodies are programmed in the principal's office and are changed periodically."

Despite its physical appearance, however, the school has continued to grapple with substantial achievement issues. According to school staff members, one promising development was the award of the Macy grant to launch the Bioprep program in 1985.

In its first year of operation, the school had difficulty attracting students who could meet the required grade average of 80 and were willing to tackle the more rigorous curriculum of the new program. Nevertheless, by the end of the program's first year, the small cadre of Bioprep students' average scores on the Stanford Achievement Test were significantly higher than those of all other Tuba City students. Bioprep students had an average total math score of 724.1 compared to an average total math score of 684.2 for students not in the program. The national average for total math was 703. On the language portion of the test, the national average was 685; Bioprep students scored 686.3 and non-Macy students scored 659.2.

The program staff continued to refine a bioprep curriculum which includes an innovative math and physics course for ninth graders, biological chemistry for tenth graders, an integrated English-American history course, Algebra II, and physics for juniors and a problem-solving course in anatomy and physiology and advanced math for seniors. This curriculum is significantly more demanding than the school's general requirements. Bioprep students take five math courses; non-program students are only required to take two. Four years of laboratory science and two years of foreign language are required of bioprep students; other students need only take two science classes and they have no language study requirement.

Each year the Macy students' test scores have inched upward. In 1988-89, ninth and tenth graders scored higher on the ACT than did local non-bioprep college-bound seniors. Also, of the 24 Bioprep seniors and 2 juniors taking the test, more than half surpassed national norms in English, math, social studies and on the composite scores for the first time in the school's history.

In 1989, the first bioprep class graduated. A total of 42 students received diplomas and 30 of them had been accepted to four-year universities for the fall semester and nine were enrolling in community colleges.

Unlike some of the other Macy sites, Tuba City does not yet have a list of students with college acceptances from the most selective and competitive schools in the country. The program teachers admit their students have a considerable way to go if they are to become truly competitive with other students interested in professional health careers. But like the staff members in Greene County, they can point to unparalleled progress and they claim that for the first time, large numbers of their students believe that college is within their reach and that they are determined to grasp that opportunity.

The other Macy sites -- Barton, Clinton, Randolph and Hillhouse -- have equally compelling stories to be told.

A Composite Picture of Achievement

Just as the Macy students are recording significant accomplishments at their local schools, when analyzed across all sites as a group, they are also demonstrating some important achievement gains. Taken as a whole, the Macy students:

- take substantially more math and science courses than do their peers across the county;

- are receiving high grades in math and science courses despite more stringent grading practices and more difficult course content;
- score at or above the 60th percentile in standardized tests of reading, language and mathematics;
- are approaching national averages on the Scholastic Aptitude Test (SAT) and significantly outscoring national SAT averages for various ethnic groups;
- receive college acceptances from some of the more selective four-year institutions in the country;
- are almost all attending four-year colleges and universities (90%);
- are awarded scholarships and financial aid which cover about 75 percent of all college costs for about one-half of the students; and
- are pursuing college studies in health-related fields, math, and the physical and biological sciences in substantial numbers (40 percent). Of all students taking the SATs in 1989, only 18 percent indicated that they intended to major in these fields.

Each of these areas of achievement are described more fully in the following pages.

Preparation for College

Research related to the ability of students to complete college indicates that major factors which appear to enhance their success in postsecondary studies include: good high school grades, well-developed study habits, and "relatively high self-esteem in terms of academic ability." According to recent studies, these factors are especially strong predictors of collegiate success for minority students. Other factors which seem to be particularly related to the college persistence of African American students are high achieving test scores, feeling well prepared in mathematics, and having taken a secondary school curriculum that included a large number of science and foreign language courses (Astin, 1982).

All of these critical factors seem to be apparent within the Macy programs. Despite some variations across the program sites, the curriculum for Macy students places a strong emphasis on math and science preparation. In fact, three-quarters of the Macy students take four years of English, math and science and many, especially in the New York sites, also take four years of social studies and three years of a foreign

language. At the New York programs, almost all English, math and science courses offered in the Macy programs are regarded as honors level classes.

The Macy students take considerably more coursework in math, science, and foreign languages than do most American high school students. Sixty-six percent of Macy students, for example take four or more years of science, compared to a national average of only 39 percent. In mathematics, 75 percent of the Macy students take four or more years of study, while only 64 percent of the nation's high school students complete a comparable number of years in the subject.

Years of Coursework Reported By A Sample of Macy Seniors, 1989 (n=269)		
	Average For Macy Students	National Average For College-Bound Students
Mathematics		
4 or more years	75%	64%
3 or 3 1/2 years	21%	30%
Less than 3 years	4%	6%
Foreign/Classical Languages		
4 or more years	37%	23%
3 or 3 1/2 years	45%	27%
2 or 2 1/2 years	15%	37%
Less than 2 years	3%	13%
Natural Sciences		
4 or more years	66%	39%
3 or 3 1/2 years	23%	40%
2 or 2 1/2 years	5%	19%
Less than 2 years	6%	2%

In fact, the relationship between high school preparation specifically in mathematics appears to be strongly tied to minority students entering college as well as to their likelihood of choosing a math or natural science major. In a yet to be released U.S. Department of Education study, taking algebra in high school was identified as the best single predictor of African American students going on to college (Pelavin and Kane, 1990). Algebra, the study concludes, is the most likely determinant in whether and when students can enroll in academic or college preparatory courses of study in their high schools. Furthermore, the kinds and number of math courses taken in high schools are a primary factor affecting the choice of many minority students to pursue college majors in math or science (Thomas, 1983).

Virtually all of the Macy students take both algebra and geometry. In higher level math courses, the Macy students far surpass the national figures. For example, a full 96 percent of Macy students take trigonometry; the national rate is 55 percent. More than half of the Macy students take calculus versus only 19 percent nationally.

Math Coursework taken by a Sample of Macy Seniors, *1989 (n=269)

Mathematics	Macy Seniors	National Averages For College-Bound Students
Trigonometry	96%	55%
Pre Calculus	69%	29%
Calculus	53%	19%
Computer Math	39%	19%
Other Math Courses	25%	25%

*All Macy students take algebra and geometry as a part of the required Macy Curriculum.

Advanced Placement

One indication of the Macy students' preparation for college as well as their confidence in their academic abilities is the percentages of program participants who intend to seek advanced placement in college. One quarter of the 1989 Macy seniors in a sample of 269, for example, indicated on their SAT questionnaires that they would seek advanced placement in biology. Nationally, only eight percent of the students taking the SATs indicated they would seek advanced placement in biology. One-third of the Macy students reported they would apply for advanced placement in mathematics contrasted to only 19 percent of the national population of students taking the SAT.

Percent of Students Planning to Seek Advanced Placement in College, 1989		
	Sample of Macy Senior (n=269)	National
Biology	25%	8%
Chemistry	8%	6%
Computer Science	4%	4%
English	29%	21%
Foreign Languages	18%	14%
Mathematics	33%	19%
Physics	4%	5%

Grade Point Averages

One measure of how well Macy students are faring with curricula which are more rigorous than in most U.S. high schools is their grades. Many program teachers and students alike report that there's no such thing as an "easy A" in a Macy class. Interviews with teachers revealed that they believe that they grade harder in the Macy classes for two reasons: they are confident that the students can rise to the challenges of a more stringent grading policy and they believe the tougher standards give students a more realistic view of what to expect in college.

Nevertheless, an analysis of students' grade-point averages (GPA) indicate that Macy students' grades fall into the "B" range for most of their courses. In 1988, Barton and Alabama students had the highest GPAs in English, math and science courses of the six program sites. Their GPAs for these courses ranged from 82 to 85. Tuba City and Hillhouse recorded the lowest GPAs of the Macy sites with averages from 73 to 78. Given the advanced nature of most Macy courses, these grade averages make most Macy students very competitive with other college-bound students across the county.

MEAN GPA for English, Math and Science for Macy Students, 1988

School	English GPA	Math GPA	Science GPA
Barton	85.19	82.01	82.83
Clinton	82.69	74.47	74.63
A. P. Randolph	81.33	79.30	77.45
Hillhouse	74.41	75.10	77.93
Tuba City	77.50	73.23	76.08
Alabama	84.03	82.21	82.30

Another interesting finding regarding the Macy students' grades is the relative parity between female and male students. The traditional pattern of high school males obtaining higher GPAs in math and science courses than female students was not evident in the analysis of 1988 GPAs. Female students had GPAs in their math and science courses which fell within one-half of one point of the GPAs earned by their male peers.

MEAN GPA for English, Math and Science for Macy Students by Gender			
Macy Students	English GPA	Math GPA	Science GPA
Male	83.64	80.19	80.44
Female	80.96	80.10	80.18

It should be noted that the grade-point averages (GPAs) of Macy students in this above-average range are not unexpected because in most sites dropping below a certain average usually results in a probation period, after which if grades have not improved, the student is no longer allowed to participate in the program.

Scholastic Aptitude Tests

In February 1990, three subtests of a national standardized test instrument, the Comprehensive Test of Basic Skills (CTBS), were administered to a sample of almost two hundred Macy seniors from the New York, New Haven and Tuba City program sites.

The results of this test administration reveal that the Macy students scored above the national median in all three areas: math, reading and language. Total reading scores were at the 70th percentile; total math scores were at the 62nd percentile. Not surprisingly, given the many language minorities participating in the Macy programs, the lowest of the scores was in the language area. However, even in this area, the Macy students' scores were above the national median; language results were at the 58th percentile.

Median National Percentile Scores for Sample of Macy Seniors on the Comprehensive Test of Basic Skills, 1990 (n=197)	
Sub test	Median National Percentile
Reading Vocabulary	68.7
Reading Comprehension	72.1
(A) Total Reading	**70.4**
Language Mechanics	57.0
Language Expression	56.3
(B) Total Language	**58.5**
Math Computation	66.5
Math Concepts and Applications	55.3
(C) Total Math	**62.4**
Total Battery (A+B+C)	**63.5**

PSATs and SATs

Other measures of the Macy students' achievement are the Preliminary Scholastic Aptitude Test (PSAT) and the Scholastic Aptitude Test (SAT). While the PSAT scores of Macy students in 1988 show a progressive increase in performance from grades nine to eleven, the scores do not reflect as strong a showing as other measures.

Nevertheless, the eleventh grade results are approaching the national averages and individual Macy schools are reporting some impressive outcomes. For example, in school year 1988-89, eighty percent of the Macy juniors scored above the national average on the math portion of the PSAT and 56 percent surpassed national averages on the verbal portion.

MEAN PSAT Scores for Macy Students, by Grade Level, 1988		
Grade (n=)	Verbal	Math
Nine (796)	31	35
Ten (745)	33	36
Eleven (268)	37	41
National Average	41	46

An analysis of the Macy students' performance on the SAT provides a more complete picture of their achievement. A sample of 269 of the 1989 scores reveal that the Macy students' results are nearing the national averages, especially on the math portion of the SAT. This approximation to the national averages is especially instructive inasmuch as the ethnic and racial breakdown of the Macy sample was 60 percent African American; 12 percent Puerto Rican; 11 percent other Hispanic backgrounds; 6.3 percent Native American; 4.8 percent Asian; and less than one percent white. (Four percent of the sample did not specify a race or ethnic background).

MEAN SAT Scores for A Sample of Macy Seniors, 1989 (n=269)		
Verbal	Macy	National Average *
Male	406	434
Female	393	421
Total	396	425
Math		
Male	494	500
Female	440	454
Total	452	476
* National averages for public school students		

An examination of these students scores when compared to national averages of various race and ethnic groups shows that Macy students consistently score dramatically higher than other college-bound students from the same racial and ethnic backgrounds on both the math and verbal sections of the test. For example, African American Macy students in the sample scored 56 points higher on the math portion of the SAT than other African Americans taking the test. Similarly, Puerto Rican students in the Macy programs scored 51 points higher on the SAT math section than the national average for all Puerto Rican students taking the test and 41 points higher on the verbal portion.

MEAN SAT Scores for A Sample of Macy Seniors by Race/Ethnic Group Membership, 1989		
Verbal	Macy	National Average
African American	398	351
Puerto Rican	401	360
Other Hispanic	392	389
Math		
African American	442	386
Puerto Rican	457	406
Other Hispanic	455	436

Analyses of these scores by reported family income and first languages learned also show substantial differences between the Macy students and high school seniors of similar income levels and language backgrounds. Among families with yearly incomes below $20,000, the Macy students score from 8 to 28 points higher than students from similar financial backgrounds. Likewise, Macy students from homes where a language other than English was the first language learned scored 65 points higher on the math test portion than students taking the test with similar language backgrounds. These Macy students scored 20 points higher on the verbal section of the test than their counterparts.

Mean SAT scores for a Sample of Macy Seniors, by Family Income, 1989 (n=269)				
Family Income	Macy		National Average	
	Verbal	Math	Verbal	Math
Less than $10,000	388	437	360	420
$10,000-$20,000	397	456	389	440
$20,000-$30,000	398	444	412	458
$30,000-$40,000	380	453	426	472

Mean SAT scores for a Sample of Macy Seniors, by First Language Learned, 1989 (n=269)				
First Language Learned	Macy		National Average	
	Verbal	Math	Verbal	Math
English	399	447	436	479
English and another language	399	472	405	458
Language other than English	385	454	365	489

Macy student scores on the Test of Standard Written English (TSWE) further indicate the students' strong performance despite the large number of students from language minority backgrounds. The sample of 269 Macy seniors' mean score on the TSWE was 39.2; this closely approximates the national average of 42.6.

MEAN Scores for the Test of Standard Written English for a Sample of Macy Seniors, 1990 (n=269)		
	Mean	S.D.
Macy	39.2	8.8
National Average	42.6	10.9

Bound for College

The first graduating class of Macy students in 1987 brought promising evidence that the program's emphasis on an exacting curriculum, strong guidance and support, and a wealth of enrichment activities was a winning combination. Eighty-five percent of the original cohort at Barton, Randolph and the five Alabama schools completed the program. Ninety-five percent were accepted to four-year colleges and universities and half of the students reported their intent to pursue majors in medicine, biomedical science or other health-related fields.

Subsequent classes of Macy graduates have produced similar results. In 1989, a study of 269 Macy seniors (drawn from all sites except Alabama) revealed that 96 percent intend to enter a four-year college or university. Seventy-six percent of these seniors also said that after completing undergraduate school, they planned to seek graduate level or professional degrees. Of the 4 percent indicating they planned to attend community colleges, most were from Tuba City. These students reported they most likely would seek their associate degrees from two-year institutions on or near the reservation.

Given this sample was comprised only of students taking the SAT, such high percentages of students with college plans might well be anticipated. However, several other data sources also confirm that Macy students have college-going rates in excess of 90 percent. A survey of 210 graduating seniors at the three New York Macy sites, Hillhouse and Tuba City in February 1990, indicated that 97 percent intend to enroll in four-year institutions in the fall. Additionally, individual annual reports from all Macy sites report that more than 92 percent of the Macy class of 1989 had plans to enter four-year colleges.

College Plans for a Sample of Macy Seniors, 1989 (n=269)	
Plan	
(a) Attend 4-Year College or University	96%
(b) Apply for Financial Aid	94%
(c) Seek a Graduate or Professional Degree	76%
(d) Apply for Advanced Placement/ Honors level courses in college	30%
(e) Intended Major Field(s) of Study:	
•Health professions	38%
•Education/Social Sciences	18%
•Business/Commerce	13%
•Engineering	9%
•Science/Math related subjects	8%
•Other	14%

College Acceptances

Of the 339 Macy graduates in 1989 who applied to four-year colleges, 31 students (9%) indicated they would be attending the nation's most competitive institutions, such as Harvard, Cornell, Dartmouth, Wesleyan, Yale and the University of Pennsylvania. Macy students received a total of 73 acceptances from this caliber of institution; some students received more than one such offer of admission and others were accepted but have decided to attend other colleges.

Number of 1989 Macy Acceptances to Most Competitive Colleges and Universities	
College Name	**No. of Acceptances**
Barnard	1
Brown	3
Carnegie-Mellon	1
Columbia	4
Colgate	5
Cornell	8
Dartmouth	6
Georgetown	1
Harvard	4
Johns Hopkins	3
Oberlin	1
Princeton	1
Radcliffe	1
St. Johns	2
Skidmore	2
Stanford	2
Swarthmore	4
Univ. of Calif. at Berkeley	2
Univ. of Pennsylvania	5
Univ. of Virginia	1
Wesleyan	10
Vassar	1
Yale	4
U.S. Air Force Academy	1
Total Acceptances	73
Figures represent acceptances not actual institution attended; some graduates received more than one acceptance; others were accepted and elected to attend other colleges.	

The largest proportion of 1989 Macy graduates (36%) indicate they will be attending colleges ranked as "competitive" by Barron's Guide to Colleges. These institutions have median freshman verbal and math SAT scores between 450 and 525 and generally accept students with grade-point averages of B- or better.

One quarter of the Macy graduates will be attending colleges which require SAT scores in the 525 to 575 range and are ranked as "very competitive." These schools accept students who rank in the top 35 to 50 percent of their graduating classes.

Another seven percent of the Macy seniors have chosen to attend schools ranked as "highly competitive." In general, these institutions accept students with grade-point averages of B+ or better and SAT scores exceeding 575. They typically draw incoming freshmen who were ranked in the top 20 to 35 percent of their classes.

Ranking of 4-Year Colleges Macy Graduates Will Attend in Fall 1989

	Number of Macy Students	Percent of Macy Students
Most Competitive	31	9%
Highly Competitive	24	7%
Very Competitive	82	24%
Competitive	122	36%
Less Competitive	66	20%
Two-Year Institution	14	4%
Total	339	100%

Barron's Education System rankings were used as criteria for ranking institutions. Represents rankings of institutions attended by Macy graduates from all programs except DeWitt Clinton for which statistics on the 1989 graduating class were not available. Two-Year institutions were not ranked.

Fields of Study

With the first graduating classes of Macy students, the program's ultimate goal of increasing the number of minority students entering health-related careers appears to be bearing fruit. In a sample of 269

Macy students applying for admission to college in the fall of 1990, thirty-eight percent plan to major in fields which lead to careers in the health profession. About nine percent of this group said they plan studies in engineering, and an additional eight percent to major in mathematics and the physical sciences. This sample of Macy students was 90 percent minority (African American, Hispanic and Native American).

This large percentage of Macy students intent on entering collegiate studies in quantitative fields offers the promise of somewhat alleviating the severe under-representation of minorities in these areas. While minority students constitute about 20 percent of the college student population, they account for only 1.6 percent of all baccalaureate degrees in math, science and engineering (National Academy of Sciences, 1987).

Choice of Quantitative Majors A Sample of Macy Seniors vs. National Averages, 1989

Major	Percentage of Macy Seniors	Percentage Nationally
Biological Sciences	3%	4%
Engineering	9%	10%
Health and Allied Services	33%	12%
Mathematics	1%	15
Physical Sciences	2%	1%

Another survey of the 1990 Macy graduating class corroborated these student plans. In this survey group, 41 percent of the seniors reported plans to major in the physical or biological sciences.

Two graduate surveys, one conducted in 1989 and one in 1990, confirm that significant numbers of Macy graduates do declare majors in health-related fields. The 1989 survey of 193 program graduates indicated that forty percent of the students were pursuing majors in science and pre-medical studies. Of the 293 respondents to the 1990 survey, 37 percent of the graduates said they had entered health-related majors.

Financial Aid

Almost all Macy graduates depend on some form of financial aid to help defray their college costs and many are receiving substantial scholarships to assist them. Most pay for their schooling with a combination of academic scholarships, workstudy programs and grants or student loans. In the 1989 graduate survey, 48 percent of the students indicated these kinds of financial aid paid for more than 75 percent of their tuition and housing costs. Another 20 percent said from 50 to 75 percent of their college costs were covered by these types of support.

Macy guidance counselors spend considerable time helping students in the programs to identify potential scholarship funds and to complete financial aid applications. These efforts appear to be reaping results. For example, at A. Philip Randolph High School the 70 Macy students in the class of 1989 received over $1 million in scholarships from private colleges and universities and DeWitt Clinton's first graduating class of 10 students received a total of $240,000 in scholarships. In the 1989 survey of Macy graduates, over half (51%) of the 193 respondents indicated they had received an academic scholarship.

Graduates Look Back

Graduate surveys confirm that most Macy students followed through on their stated intentions as high school seniors and did indeed enroll in college after graduation. More than 90 percent of the graduates responding to a 1990 survey indicated that they were currently enrolled in four-year colleges and universities.

In a 1989 graduate survey, when former Macy students were asked how much influence did the Macy program experiences have on their choice of intended occupation or career, 37 percent responded that the program had a "lot of influence" on such decisions; 40 percent said the program had "some influence."

The 1989 survey also explored the graduates' opinions about the program's role in preparing them to meet the academic demands of college. More than half (56.5 percent) reported that the program "definitely" had prepared them for college; 31 percent credited the program with "probably" preparing them for postsecondary work.

Given a list of ten different aspects of the Macy program, ranging from "peer support" to "enrichment activities," the survey respondents were asked to identify the one program feature which was most beneficial in preparing them for college. The most frequently selected response was "the curriculum/courses offered to the Macy students." Forty-two percent of the graduates identified the curriculum as the aspect of the Macy program which has proven most beneficial to them in college. The second most selected program feature (24 percent) was

"the quality of teaching/instruction in the Macy courses. The percentages of graduates selecting other program components as most beneficial were:

15%	Being grouped with other high achieving students
9.8%	Counseling and support services
8.3%	Summer academic programs/camps
7.8%	Test-taking courses (i.e., SAT prep classes)
7.8%	College orientation activities
5.2%	Peer support from other Macy students
1.5%	Enrichment activities (field trips, travel, cultural events, etc.)

In summary, the Macy students have amassed many indicators of success and achievement. In substantial numbers, they are tackling more demanding courses; getting good grades; performing well on standard measures of achievement; entering college; and pursuing postsecondary studies, often in fields which are in critical need of their talents.

Jeane Windland:
"Even the moon is possible."

A tenth grader in the Macy Bioprep program at Tuba City High School on the Navajo Reservation in Arizona, Jeane Windland is a capable and determined young woman.

Academically, Jeane is doing quite well. With a GPA of 3.67 for fall, 1988 semester, she ranks in the top 2 percent of her class. As a sophomore in the Macy program, she's earning a B in introduction to biology and chemistry, B in honors geometry, A in algebra II, B in honors English, B in world history and geography, and A in health. Last year, her records indicate she accumulated an average of five absences per class second semester, and her GPA dipped to 3.1, with C's in her three Macy program courses for the term. This year she's been absent four days, and her performance, according to her English teacher, has dropped from a B to a C.

Her strength as a student, says the Macy program instructor, is her ability to get along well with others and work as part of a team. While she won't strike off in a different direction, she will speak her mind when she's asked a question; and her answer will show some reflection. "She's not a teacher pleaser; she's real solid," says the teacher. "She'll sit back and watch and when [she feels] more comfortable, she'll join in."

This tendency to hold back concerns her English teacher. "I can see in the future that if Jeane doesn't push herself to ask questions and speak out she could miss out, and also [her teachers] could miss out because they wouldn't realize they have someone here who has knowledge and ability and skill like everyone else or better. . . ," she explains.

At home, Jeane is one of seven children. She has four sisters and two brothers. Her mother, according to Jeane, works as a legal secretary. She left high school to have Jeane at 17. Jeane's father left the family some years ago, and her mother remarried. Both natural parents were born on the Reservation; her mother is Navajo and father Hopi.

Jeane entered the Macy program as a ninth grader. She received a letter at the end of her eighth grade year inviting her to participate in the summer session. Since she didn't have other plans, she decided to give it a try; and once in the program she found it to be fun so she kept going.

As a second year student, Jeane seems to have cleared the hurdles of assimilation. She feels part of the Macy group, and she says most of her friends are in the program. She has a good sense of academic expectations. "You got to remember so many items and be real responsible, studying on your own, making sure you know the material before you go to class. . . ," she says. And over the last year, she's been able to define some of the differences between the Macy Bioprep and regular teachers.

"They [Macy teachers] expect more out of you . . . to be better than average . . . the way they look at you, they expect you to do more. They want you to be more," says Jeane. She sees the Macy staff as supportive and really interested in students.

For Jeane, classroom and summer enrichment activities, such as attending the University of Alabama program, seem to have fostered a strong identification with the Macy program. Even though she carries a lot of responsibility at home in helping her mother with the younger children and chores, she's learned to balance the demands of Macy classes with her commitment to her family and her love of sports. In fact, her English teacher puts her in a very small group of students who are able to manage the demands of being both an athlete and scholar. For Jeane, schoolwork comes first, and she thinks her mother understands this. And while her mother may not know a lot about the program, she encourages Jeane and is supportive of her participation in the Macy program.

Jeane realizes she's having a little trouble in some classes, but overall she thinks she doing all right. She's determined to put school work first, and she appears confident she can handle the challenge.

According to Jeane, the Macy program has helped her learn to be more responsible and to stand up for what she believes in. It has made her more determined about accomplishing her goals and given her a better understanding of school in general. She knows that to do well, she has to work hard; and sometimes this means staying up late at night and then rising early in the morning to study. She believes being a Macy student will help her get into college and, once there, to feel comfortable.

Her English instructor sees the benefits in different terms. "What will she pull out of it? The scientific method, exposure to science. Hopefully, she'll feel more comfortable with science, and she'll be able to function quite well with English, writing, reading, and speaking English. Hopefully, she'll be a little more assertive . . . experiences will help her expand her view. Most importantly, the program will give her the knowledge and ability and confidence that whatever she wants she can go after and take."

She also thinks the Macy program builds reality. "We say shoot for the moon . . . but we also show you it's possible.

Their Support and Guidance

The "safety net" of support provided to students is a key ingredient of Macy high school programs. Through a host of academic assistance and enrichment activities, career and personal counseling, and individual attention, students are surrounded simultaneously by exciting challenges and a secure, understanding environment.

"We ask our students to stretch themselves in ways they might not be sure they can," explains one Macy teacher, "but they know the adults will be there to if they start to wobble."

The adults involved in the Macy student's life -- teachers, parents, counselors, program directors, do appear to play a critical and very prominent role in the students' academic and personal well-being. When asked to describe how their program differs from other school experiences, Macy students are apt to first mention the assistance and encouragement they receive, then only secondarily note the more demanding course of study.

Time and again, these students point to one -- or several -- adults in their lives who are fully "in their corner." Sometimes it's a parent who doesn't necessarily understand her son's pre-calculus homework, but nevertheless is standing at the doorway to his room telling him, "I know you can do it." Others mention a particular teacher or counselor who intervened when times were especially difficult, offering the words of encouragement or listening ear.

Discerning Teachers

"The Macy teachers know me. Right now, I could talk to any teacher," explains one student. "They're there for me not just as a teacher but as a counselor."

At another program site, a student offers, "Macy teachers ask you what's wrong. They tell you what you're doing really well on." The teachers, he says, talk of college and beyond. "They make you see yourself there [at college] and they tell you how you'll be successful, a classmate adds, "and after awhile, I began to believe them."

Other students emphasize how their teachers always project high expectations of the students. "They expect more out of you . . . they expect you to be better than average. The way they look at you, they expect you to do more. They **want** you to be more," one student explained.

At some program sites, especially Clinton and Hillhouse, the teacher's role in providing counseling -- both personal and academic -- is especially emphasized. At Hillhouse, the day-to-day support students often need to meet their academic demands is not a function of the counseling office. Teachers and the program administrators assume responsibility for much of the "traditional" guidance role.

Likewise, at Clinton, the teachers work closely with the administrators and counselors to provide continuous support to their students. They work as a team to identify individual student needs and then to develop a specific plan for assisting in each student. Often this involves working with agencies outside the school to help students or their families with a range of social services: health care, employment, housing, public assistance, etc.

Counseling Services

At the New York, Connecticut and Arizona programs, the development of a strong guidance and counseling program has been a particularly high priority. For example, these schools have one counselor who is specifically designated to work full time with the Macy students. These counselors often must divide their time between assisting students with personal issues and a host of responsibilities related to college admissions. They also are often the key persons involved in planning some academic support activities such as SAT preparation seminars, student visits to college campuses, and field trips to local hospitals or research centers to increase students' exposure to different career possibilities.

A great deal of the counselors' efforts are directed at the college application process. "College admissions time here is a lot like the tax

season for accountants," joked one counselor. With some students applying to seven or eight colleges and trying to orchestrate enough financial support through scholarships, grants, loans and workstudy programs, the paperwork burden on counselors can be overwhelming. In addition to helping students determine which colleges best suit their interests and career goals, the counselors work with students in the development of applications, secure letters of reference and assist families with financial aid forms. As most of the Macy students require substantial financial assistance in order to attend college, identifying scholarship opportunities is a critical function of the Macy counselors.

The time devoted to juniors and seniors with college-related activities is sometimes criticized; parents and some students believe that the counselors are so busy with college admissions that the counseling needs of freshman and sophomores are often not given adequate attention. Program administrators readily admit that the many college-related duties are taxing the guidance personnel. The Randolph program, in particular, directs much of the counseling energies to the college admissions process and is attempting to address the academic counseling needs of younger students through the extended-day period.

As the programs have developed over the years, program administrators and counselors have recognized that the early program retention issues might have been better resolved if special counseling support were focused on the ninth and tenth grades. In recent years, special efforts have been initiated to provide the extra support for incoming Macy students. In some sites, special study groups or before and after school counseling activities are now provided.

The dilemma of how to provide the needed counseling services for all Macy students has not yet been resolved, however. Even though at all the Macy sites, except Alabama, the counselor to student ratio is better than at most high schools, the diversity of student needs and the work related to college placement still stretch the counseling resources too thin. Those sites, such as Barton, which have been able to rely on both a well-planned counseling operation and their teachers to serve in guidance roles, appear to have achieved a balance between academic and personal counseling and college admissions activities.

Barton's comprehensive counseling program includes an orientation course for incoming freshmen and an academic and career advisement center that is staffed by both a full-time and a part-time counselor. Juniors and seniors spend a significant amount of time with counselors exploring college options, visiting universities and preparing applications. The counselors also work closely with teachers, however, to identify and assist students at all grade levels who are having academic or personal difficulties. Students who need help are referred to study programs where they can receive assistance to improve study habits and increase coping and problem-solving skills. These students receive tutorial assistance from trained Brooklyn college students.

"Everybody else gets home from school and they go up to their computer games or go outside and hang around. But you can't do that if you want to get good grades in the Macy program. You have to go home and study and do your homework -- not just write the answers down -- you have to study and review."

Clara Barton
Senior

Clinton also has placed special emphasis on its counseling services. The teachers, counselor and program coordinator all share in counseling responsibilities. One of the school's innovative support activities is a weekly luncheon hosted by the program coordinator, guidance counselor and college advisor. Small groups of students from different grade levels meet for lunch in the program office to discuss current concerns. The luncheons allow younger students to interact with juniors and seniors who are involved in the program's extensive peer tutoring efforts.

The University of Alabama program sites have not developed their counseling components to the degree the other sites have. This is partially due to financial constraints; foundation and university support is spread over 34 schools. Also, the number of Macy students at these schools ranges from a low of less than ten participants to more than a hundred. The Alabama schools rely on the regular high school guidance departments for most counseling functions. However, the University of Alabama has offered special staff development sessions for the counselors in Macy schools and directly provides a number of enrichment activities for the Macy students at all 34 schools.

Academic Support

A hallmark of the Macy programs is the wide range of both summer and school year academic support programs and activities. All incoming Macy freshmen are offered opportunities to attend summer academic camps which focus on the development of study skills, critical thinking, career exploration and math and science studies. For some Macy programs, attendance at the summer program is mandatory.

Like the Macy curriculum, these residential summer experiences are highly structured and academically challenging. Students, after a day of classes in math or science, may have up to three hours of homework a night. In addition to intensive coursework, however, the programs also focus on the development of cooperative learning and problem-solving. Spirited academic competitions are also a part of this experience which seems to build strong student identification with the Macy program and its goals.

The camps range in length from two to four weeks and are held on college campuses to give students a firsthand college experience early in their high school careers. CAMPSTAR is the summer orientation program for the New York Macy students, although in recent years some students from Tuba City and Alabama also have participated. (See Sidebar on CAMPSTAR.) Tuba City and Alabama also sponsor similar summer orientation programs.

In addition to the summer orientation programs, Macy students in other grades are offered opportunities to attend a number of enrichment programs sponsored by universities and some of the nation's most

CAMPSTAR: Summers are for Learning

Critical thinking, problem-solving and analytical reasoning are the focus of a residential summer camp for academically talented juniors and seniors in New York City high schools.

With one of the longest acronyms imaginable, CAMPSTAR (Commitment, Achievement, Motivation and Progress through Stress on Thinking, Analyzing and Reasoning Skills) is the creation of Lottie L. Taylor, principal of A. Philip Randolph High School in New York City.

Each summer she, a number of the Randolph teachers, and college students trained in the CAMPSTAR approach run the four-week program. The camp primarily serves students from the three New York City Macy programs and a number of "at risk" students from other NYC high schools. In recent years some Tuba City and Alabama students have also participated.

The program's approach is to combine group learning and healthy competition. Teams of eight to ten students of varying academic abilities learn together and then compete for points awarded in quiz contests, for homework completed and on tests.

In three-hour class and laboratory sessions held Monday through Thursday, science and math concepts are designed and presented to develop thinking skills. Students learn about the control of variables in research, correlational and proportional reasoning and the application of the laws of probability. In another three-hour session each day, students are in English class which is organized around themes such as "perfection," "truth," "freedom," and "authority."

A minimum of two hours is devoted to homework each evening and on Fridays, students are tested on the week's work in an academic "olympics." Camp participants also have a full schedule of recreational activities and go on field trips to college campuses.

The program is jointly funded by the Macy Foundation and the New York State Department of Education.

selective boarding schools. The university programs also are generally residential one- or two-week experiences which focus on advanced math and/or science areas. Each year, more than 200 Macy students from across the country attend these programs, often using scholarships provided by the sponsoring university.

Students have high praise for these summer activities. They credit them with boosting their interest in science and math, improving their study habits, and building self-confidence. One Tuba City student explained that before attending a summer program at the University of Alabama, she had never before been off the Navajo Reservation. "It was a real shock for me," she said, "Native Americans are taught to not share their thoughts or opinions openly, and here I was in a problem-solving class being asked 'What do you think?' It was a different world for me."

Even the Alabama students attending the same program said the experience was a culture shock for them. Many, even though they live less than one hundred miles away, had never been on a college campus. "After the summer program," said one 15-year-old native Alabaman, "I could just picture myself in three years walking to class on that campus. I guess it made the reason for all the studying real to me."

School Year Support

In addition to the summer activities, Macy students at all sites are also provided with a wide variety of academic supports and enrichment activities. The extended school day in the programs often is used, especially with ninth and tenth graders, to focus on study skills development, language and test-taking skills and to reinforce math and science concepts taught during the regular classes. This time is also devoted to giving assistance with homework and individual and small group tutoring. Peer assisted tutoring also is prevalent in these seventh period classes.

However, the extra periods are not simply "study halls"; they are structured classes with program staff much in evidence. Macy teachers and administrators feel this time gives them an important opportunity to monitor students' acquisition of skills and to offer some one-on-one instruction and assistance.

The range of before and after school activities along with a seven-period day means that many Macy students are at school from 7:30 in the morning to well after 4 p.m. Some complain that their Macy activities leave very little chance to participate in other school functions. Many students explain that they had to give up hobbies and participation in sports teams and clubs, in order to fit in all the Macy activities and the extra homework load. However, other Macy students appear to have flowered under the program demands and are very successful in both academic and extra-curricular pursuits.

For the New York Macy sites, many enrichment activities take place off the high school campus. Usually beginning in tenth grade, students can participate in an array of seminars and workshops sponsored by local universities and research centers. Most of these are one-day activities focusing on particular science topics and are designed to reinforce classroom learning as well as generate further interest in scientific study.

All Macy program sites are participants in the Cold Spring Harbor Laboratory workshops. Here, students and teachers alike, focus on developments in DNA research and biotechnology. The traveling "Vector Van" allows the laboratory to bring sophisticated experimentation directly to the students' schools. (See sidebar "Bringing Genetics to High School Students".)

Enrichment activities are almost a daily part of the Macy program. In addition to the summer programs, tutoring services, counseling, and academic seminars, the Macy programs integrate into their classes numerous field trips to museums and exhibits, guest speakers, college nights, science fairs, and math team competitions. This sometimes hectic schedule of activity and frenetic pace is all intended to expose Macy students to new ideas and the practical applications of their classroom learning. In rural Alabama as well as in imposing New York City, the Macy program staff attempt to give their students a look at "the larger picture" and a vision of how they can contribute to that view.

Program Leaders

Collaboration and teamwork are key concepts in the administration of all the Macy sites. Many activities are the products of joint efforts among teachers, counselors, the program coordinator, and the principal or project director. In some sites, for instance, staff development is a shared endeavor between Macy teachers and a university partner. Counseling, as described above, often is a collaborative undertaking. This mode of operation among the adults in the programs reinforces the "safety net" for the children they serve.

In essence, the cooperative learning and problem-solving taught in the classroom is modeled for students by their teachers and administrators. Macy teachers are particularly enthusiastic about the opportunities to work within departments or across disciplines; they contend these activities reduce the isolation of teaching, and create an environment of trust, a shared purpose, and a high level of collegiality.

Leadership of the Macy programs, therefore, can be found in many places -- among the teachers, counselors and university partners. The coordinators of each site also play an essential leadership role. They generally are viewed by staff and students alike as an integral part of the "Macy team," not usually as authoritarian figures. In all sites, even

Bringing Genetics to High School Students

Hands-on activities are often the best teaching strategies for presenting a new concept or for explaining why something works the way it does. Such activities inspire excitement in students and encourage them to become involved in learning actively, rather than to be only passive observers.

With help from the Cold Spring Harbor Laboratory, Macy programs at all sites are able to offer a summer workshop on DNA. Students learn about the most recent advances in DNA technology by conducting many experiments in the lab. They are encouraged to delve into outside resources on the subject and to perform some new experiments on their own.

The DNA Vector Van, a mobile teaching laboratory, visited 25 Macy schools in Alabama and allowed approximately 900 students and their teachers to participate in two traveling lab experiments -- bacterial transformation and DNA fingerprinting.

The summer workshop and the DNA Vector Van generate among students not only enthusiasm for scientific experimentation, but also a respect and greater understanding of scientists' role in seeking to contribute to the world's knowledge base.

Alabama where the coordinating function spans 34 schools, the coordinator is a part of the daily life of the program. At the individual school sites, the coordinator knows the students well. They speak of the coordinators as they do their teachers and counselors: "He knows me" or "I can talk so easily to her."

The role of the school principal in the Macy programs varies from site to site. At some sites, the principal is not directly involved in the program operations, leaving most administrative functions and daily business to the coordinators. At other sites, however, the principal is a primary leadership figure within the program.

At Randolph, for example, the principal serves as the project director and the assistant principal is the program coordinator. In this setting, such an organizational structure has served the students and the program very well. The principal is a driving, hands-on force on behalf of her students. Because of her leadership role both in the entire school and in the program, she has been able to incorporate the program into the overall school development plan.

Regardless of how the leadership responsibilities are configured at any given site, they seem to share some common successful elements. Shared decision-making is one such factor. Teachers and counselors at the Macy programs say they feel they are a contributing part of the entire learning process. They believe that just as they encourage risk-taking and offer support to their students, they also are encouraged to explore new methods, try out new strategies and are rewarded with appreciation for their efforts (by students and administrators) and opportunities to expand their professional knowledge and skill.

Parents

A very significant aspect of the Macy students' support and guidance is the involvement of parents in their children's learning experiences. Almost daily, it seems a new report or study is issued linking the importance of a supportive parent or parental figure to a child's academic performance. And almost as often, the lack of parental involvement in their children's schooling is decried.

In April 1990 the preliminary results of a portion of the National Educational Longitudinal Survey was released showing that the proportion of parents who had made contacts with their children's school varied according to income and education. Those with higher incomes and more years of schooling were more likely than others to initiate contacts with the schools.

Furthermore, many recent studies show that while the home-school alliance remains strong through the early elementary years, it shows signs of declining by the fourth or fifth grade and is often gone altogether by the middle grades.

Such findings would not bode well for the Macy programs' success in securing a high level of parental involvement. And in fact, the Macy programs do experience difficulties with this important educational component. Although the program staff indicate that the level of Macy parent involvement is generally higher than that of non-Macy parents, the participation rate is "never at an optimal level." An excerpt from the 1988-89 DeWitt Clinton annual report describes the nature of this problem:

> "Development of a strong parental support component for the program has proven to be more difficult than originally expected. [Macy] students' parents have difficulty in travelling to Clinton due to geographic distance and poor transit facilities. The pervading fear of travelling after dark in the Bronx deters many parents from attempting to attend late afternoon or evening meetings. Work schedules and the lack of childcare for younger siblings compound parents' difficulties. Al-

though the attendance rate for [Macy] parents at Clinton's open school nights and afternoons is many times greater than that of non-Macy parents, less than half of the program parents visit the school."

To address this issue, the Clinton staff developed a telephone parental support model to complement the program's schedule of parent orientation meetings, open houses and college nights. The program coordinator and the guidance counselor, who is trilingual, estimate that they make over 3,000 telephone contacts with parents per month. Since parents regularly expressed their thanks for the opportunity to consult with the staff without travelling to the high school, they decided to formalize this activity. In the fall of 1989 the "Dial-A-Counselor" program was initiated. A separate telephone line was installed just to receive calls from parents. Parents were issued a business card imprinted with the Dial-A-Counselor phone number and the daily hours of operation.

Parent Involvement in Alabama

Awards ceremonies, tutorial help, field trips and scholarship funds -- these are only a few of the projects undertaken by parent groups that support the Macy/Bio-Prep programs located in Alabama's participating schools.

Parent group coordinators are continuing their efforts to promote parent and community involvement with students. While the majority of schools already have support from parent groups, the task remains to keep parents, and community groups, inspired, involved and on the move!

Coordinators make themselves known to members of the community by speaking to social and professional groups about the Macy/Bio-Prep program. As a result, partnerships have been developed and are nurtured as schools and community groups engage in a mutual sharing of resources.

Of particular interest in recent years has been the establishment of community educational foundations that help to support the academic undertakings of Macy/Bio-Prep students. Another successful activity has been interschool parent group meetings where parents from all Macy/Bio-Prep schools have an opportunity to meet each other and discuss important issues and share ideas.

Other Macy program sites have developed creative ways of involving parents. Many opportunities to engage parent support focus on building parental pride in the academic accomplishments of their children (e.g., math competitions, newsletters, articles in local papers). Other activities are directed at providing social opportunities for parents to meet one another and program staff so they feel more a part of the "Macy experience" and thus, more comfortable in initiating contact with the school. (See Sidebar on Alabama Parents.)

Peers

Macy students across all program sites also point to their peers as sources of support. They frequently cite friends in the program who have helped them both academically and emotionally – inside and out of the classroom. One student shared how she and her friends have "a lot of discussions about how depressed they get, how many classes they have, and why they are in the program in the first place." Nevertheless, she maintains, it is these friends who encourage one another to "stick with it" because "they know they'll need it."

While the advanced classes stress the development of individual skills, the programs also have specific strategies for encouraging cooperation and consideration among the students. Students are often grouped as teams to work on joint projects; they have group competitions at the summer programs, and they often serve as peer tutors to other students.

Students admit that there is a "lot of friendly competition" among their peers, but they often look to one another for assistance. "If there is one student who doesn't understand, the whole class works together like a family to help him," explains one student.

The "family" analogy is prevalent across all program sites. Staff and students often liken the programs to a family atmosphere. One student even described some students who currently were not applying themselves to their coursework as "the black sheep of the family." She went on to describe that, like a family, the Macy program would not abandon the black sheep but with encouragement and understanding try to "get them back to the fold." This pervasive theme of "family" is reflective of the programs' successes in creating a supportive, caring environment for both teenagers and adults.

Laura Henderson:
"Learn anything anyway she can"

Laura Henderson, an eleventh grader, is a member of the first Bioprep class at her high school in Alabama. She's the type of person who just doesn't give up; if there's a way to accomplish what others may think is impossible, she'll find it. And once she embarks upon a project, she'll see it through to the end.

She currently holds a 3.96 GPA and ranks in the top 3 out of her class of 130. Incidentally, the top-ranking student is also in Bioprep, though the second is not. Laura carries a full load of courses. Fall semester she earned an A in physics, A in advanced math, A in BP English 11, A in American history, A in French I, and an A in debate. She says the only time she is absent is if she is participating in a debate.

According to her Bioprep biology teacher, Laura's strength is her ability; yet, says the teacher, her weakness could be that she has abilities in too many areas. She sees Laura as a spokesperson in her Bioprep group. Her confidence allows her to speak her mind in discussion. And she is assertive and innovative. The instructor says Laura "will learn anything anyway she can."

As a junior, Laura is quite adept at articulating what makes Bioprep different. "...in a regular class, you have some smart people and some slow. You have that in any class. With the Bioprep program, you help each other try to figure out the concept." Besides more group interaction, she also says there is more discussion in Bioprep classes. In her social studies class this year, for example, she says they discuss causes of events and students share their opinions. This emphasis on discussion is also evident in her physics class. As for assignments, Laura knows they have extra reading, but she doesn't think the work is necessarily harder.

Not only are the activities different, but so is the atmosphere in a Bioprep class. There's a different way the teacher relates to students. Laura sees Bioprep teachers as supportive and more understanding, she says they think of students as people. In Bioprep, the teacher "knows we're trying to learn, that we want to learn...therefore the teacher wants to teach us, wants to let us work." In a regular class, she says you have people "who don't want to be there, who don't care to be there, and who are made to be there," she explains.

One experience that appears to have been significant to Laura identifying with the Bioprep program was the summer camp at the University of Alabama, which she attended after her freshman year. Field trips to the University of Alabama for lectures and study skills workshops have also facilitated identification and group cohesion. This semester, Laura's Bioprep class is planning a physics field trip to Six Flags to apply theories and principles learned in class to the rides.

"We all know we can go to any of the Bioprep teachers and they'll help us out," says Laura. Even though Laura seems firmly rooted in the program, teacher encouragement is important. Her biology teacher, in particular plays a critical role in this support network. Laura sees her as a friend. Instead of an "I know more than you" attitude, Laura says her approach is "Here, let me help you understand."

At present, Laura seems to be clearly focused on school. She is willing to commit the time to stay on top of her classes. On an average night, she spends between one and a half to three hours on school work and maybe even more if she has several tests. She sees her Bioprep classes as being very challenging, and she knows she may have to try more than once to solve a problem or complete a lab.

Their Teachers and Instruction

Second only in importance to the Macy students are their teachers. As is the case in any school, it is the teachers' talents, caring and perseverance which "make or break" the connection to student learning and achievement.

Taken as a whole, the Macy teachers are professional, experienced individuals who steadfastly believe in the power of learning and the possibilities of children. Most have Master's Degrees and have been teaching for more than eight years. Colleagues often characterize them as "passionate" about their work; administrators describe them as "experts;" and students say they're "tough, but fair," and "understanding."

The Macy teaching corps is further characterized by its stability; most have been teaching at their schools for years. At Barton, of the 42 Macy teachers, the average length of service is 17.5 years and they have been at the school for the majority of those years. The Macy principals report low absenteeism among their teachers.

Macy teachers are not, however, a hand-picked elite corps; they are dedicated, knowledgeable classroom teachers. In fact, most Macy teachers do not teach just Macy students. In Alabama, for example, the Macy teachers may have only one Macy class each day. At Clinton, as a strategy to infuse some of the Macy instructional techniques into all classes, teachers are required to lead both Macy and non-Macy classes each term.

Joining the Macy Team

Teacher involvement in the Macy program is a two way street. In most schools, teachers express an interest in becoming a part of the Macy cadre, and department heads or program coordinators recommend that these individuals be scheduled for Macy classes. In a few instances, department heads or program coordinators have recruited teachers for specific Macy courses because of their expertise in the subject.

Though in most schools teachers choose to be part of the program, in some of the smaller schools in Alabama, instructors teaching upper level science and math courses have been required to participate in Macy activities. While most have found their involvement to be professionally challenging and motivating, a few have balked.

Teaching in the Macy program is, understandably, not for everyone. Because of the commitment to staff development activities, planning, and close involvement with students and parents, not all faculty members are eager to join the Macy ranks. Some teachers may feel uneasy about the close involvement with students and parents; others may not want to spend the extra time or take the risk of trying something new and different in the classroom.

Still others may criticize the program because they consider it superfluous to the already existing honors program. At Tuba City, for example, faculty members initially did not openly embrace the Macy program. Despite the school's poor academic record, teachers felt they were doing a good job with students and that the implementation of the Macy program was an indictment of their performance.

Those who volunteered to join the Tuba City Macy team suffered criticism from their non-Macy colleagues during the first years of program implementation. Though they were respected for their teaching expertise prior to joining the Macy program, they were not necessarily considered to be among the most talented teachers at the school.

Now, reports the program coordinator, they are recognized as being among the strongest and best teachers at Tuba City High. And even though there is still occasional criticism, the Macy teachers are proud of program results and they feel comfortable with what they are doing in the classroom.

Indeed, Macy teachers and program coordinators believe it takes a special breed of educator to join the Macy ranks.

"You have to have a certain attitude about kids and teaching," says one Macy teacher.

"You have to attract teachers who see the whole scope of learning and are willing to work together and take risks," notes another.

Tallying the Balance Sheet

Educators, as other professionals, often assess the overall effectiveness and desirability of a program by conducting a cost-benefit analysis. Clearly, the Macy program raises a number of questions about how Macy teachers balance the demands of their Macy and non-Macy classes.

Macy teachers will be the first to admit that preparing for Macy classes requires in-depth research and thoughtful organization of material. Macy students, they say, keep them on their toes. They ask more difficult questions. If Macy teachers devote more time to preparing for Macy classes, does this mean that they spend less time preparing for their non-Macy classes? Are non-Macy students being short-changed?

Macy teachers do not believe this is the case. They find the time they spend preparing for Macy classes is not at the expense of their non-Macy students. Instead, they say preparing for Macy classes is personally and professionally challenging. The "newness" of the material, notes one teacher, keeps Macy teachers interested, stimulated, and motivated, and they describe their Macy classes as the highlight of their day.

Interestingly, Macy teachers contend that they may spend just as much time preparing for their non-Macy classes. For one thing, in non-Macy classes, attendance is often irregular. "You can't teach them if they don't show up for class," comments a teacher.

Because Macy students tend to have better attendance records, there is not as much preparation time devoted to determining who needs what to catch up, as is often the case in non-Macy classes. In addition, teachers find that Macy students are more attentive, motivated, and more serious about learning; thus, in preparing for Macy classes, they concentrate on content rather than on flashy techniques to sustain student interest or shaping material so that students understand it. Also, in many instances, Macy teachers say they integrate the research and instructional strategies they use in Macy classes into teaching their non-Macy classes.

And what about time devoted to the evaluation of Macy student's work? Though Macy teachers assign homework regularly and assignments generally call for indepth responses to complex questions, teachers say they do not spend more time reviewing Macy student work than they spend on non-Macy student work.

While Macy student essays may be longer, they usually read more quickly because there are fewer organizational and syntactical problems. In contrast, reading the essay of a student in a modified or remedial class, notes a teacher, make take more time and patience because of the writer's lack of clarity, coherence, and facility with the language.

Integrating the Macy program into the school's existing framework also presents a number of organizational challenges. Administrators, teachers, and program coordinators must openly address scheduling, personnel, and facility issues. Incentives and disincentives must be judiciously weighed on both individual and organizational levels.

Those not involved in the Macy program have questioned the allocation of staff and resources. Some contend the program creates competition among teachers of advanced and elective courses as they try to attract talented students. And, as in Tuba City, some staff, who are perfectly happy with the way things have always been done, see the Macy program as an unnecessary intrusion on the status quo.

Yet, for Macy participants, the advantages clearly tip the scales. On the organizational level, the program has stimulated renewed interest in overall school improvement. Among teachers, there is an increased awareness of what kids need to succeed in college and beyond. The Macy program also fosters an overall school learning environment which encourages teachers and students to take risks.

On the individual level, Macy teachers cite a number of incentives. Class sizes are substantially reduced. Macy classes at Clinton, for example, have 20-25 students, compared with non-Macy classes of 34-48 students. At other program sites, the average class size ranges from 20 to 27 students.

Perhaps, the most important incentive is the supportive relationships that exist among Macy staff and students. Students and teachers feel connected and excited about learning. There's a sense of continuity and community.

For the Macy program to thrive, teachers, program coordinators, and administrators believe the program must become an integral part of the existing school structure rather than operating as a separate add-on program. As Macy strategies are carried over to non-Macy classes and integrated into the school's curriculum, all students and teachers benefit.

Minority Teachers

The national issue of too few minority teachers is particularly evident in the New York City programs, and to a lesser extent in Tuba City. For example at Barton with a 98 percent minority student population, all but one of the 42 Macy teachers are white. Clinton has a similar disparity between its student enrollment and teaching force. Randolph has a somewhat more balanced picture; 24 percent of its teachers are minorities. In Tuba City, 20 of the school's 86 teachers are Native Americans, but only 3 of these teachers are involved with Macy classes.

This absence of minority teacher role models is troubling to administrators, teachers and students alike. However, the limited minority candidate pool appears to have blunted recruitment attempts.

Staff Development

A signature element of the Macy programs is the emphasis on staff development. Just as the Macy students are provided with a variety of learning opportunities, so are Macy teachers. From curriculum writing to cooperative learning methods, the Macy teachers are presented regularly with seminars and workshops to help them refine their skills or learn new approaches. Macy teachers often travel to attend special training sessions such as the DNA technology workshops at Cold Spring Harbor Laboratory in Long Island, New York.

Additionally, at each program site, teachers and administrators jointly develop an annual staff development plan, frequently focusing on a particular theme for one semester or the entire year. At Clinton, for example, in 1988 staff development activities to integrate problem-solving approaches into all content areas was a major focus for teachers from April through the fall.

Staff development is viewed as an important means for continually improving the quality of teaching at all program sites. However, the approaches to staff development vary from site to site. Some programs work very closely with the school or program's university partner to develop staff development opportunities for Macy teachers. Brooklyn College, for example, has established itself as a regular staff development resource for Barton. Not surprisingly, the University of Alabama, in its coordinating role for the 34 Macy schools in the state, plays a primary role in providing staff development for Macy teachers. In 1988-1989, for example, the university offered 22 workshops to Macy teachers. These programs covered a range of content areas, including a month-long summer seminar on American literature of the 1920's and 1930's.

Other sites, such as Tuba City, independently develop staff development plans which often involve program teachers, representing different discipline areas, working in small groups to focus on ways to integrate key concepts across the curriculum.

In five out of the six Macy sites, staff development activities have focused primarily on course content and to a lesser extent, teaching strategies. At Randolph, however, the primary staff development direction has been on improving pedagogical practices. Teachers work in small groups to discuss particular issues and work through instructional problems. They use roleplaying techniques in many instances and are just as likely to rely on school colleagues as outside consultants to run staff development workshops.

"There's a bond that's built [in the Macy program] . . . and those bonds got tighter. When I came here as a freshman, I was like, 'I really don't want to be here,' but there was that bond. I doubt that bond will be broken until graduation day. The program and I have meshed together and are like inseparable."

Randolph
Sophomore

Curriculum

At the Macy sites, teachers also are very involved in the development of curriculum. Many of the innovative science and math courses offered in the programs are the product of Macy teachers' efforts. For example, in Tuba City, the ninth-grade course combining physics and applied math was designed and implemented by a Macy teacher. Similarly, Barton teachers developed their program's advanced math courses.

The combination of strong staff and curriculum development components at several of the Macy programs is a key factor in the instructional success of teachers. Although the Macy sites all have demanding courses of study, the curricula have been designed or implemented to meet the particular needs of the students in that particular program.

Some of each program's curriculum offerings are presented below.

University of Alabama:

- "Touchstones," a curriculum which fosters critical thinking skills through the introduction of literature.
- Anatomy and physiology, using a case-study approach.
- Honors-level courses in chemistry, physics, history, math and English.
- The Ti-In United Star Network, a distance learning program that uses an interactive satellite capability for student instruction and staff development sessions.

In some of the smaller Alabama schools in the "Macy network," the Bio-Prep curriculum represents the first complete college preparatory curriculum ever offered.

Clara Barton High School:

- A two-year writing course for ninth and tenth graders.
- Medical Issues and Ethics, a course which emphasizes speaking and library research skills and addresses contemporary issues in medicine.
- Literary Classics, a course for juniors which includes the study of The Iliad, Plato's Republic and Greek tragedies.
- Honors courses in math, American history, government and economics, Eastern and global studies.
- Anatomy and physiology, Advanced Placement biology for juniors, and genetics, bacteriology, and microbiology for seniors.

Tuba City High School:

- Five math courses required, including pre-calculus.
- An integrated math/physics course for ninth graders.
- An integrated biology/chemistry course for tenth graders.
- Physics and American studies emphasizing Native American history and cultures at the eleventh grade level.
- Anatomy and physiology for seniors, focusing on group problem-solving skills using case studies.

James Hillhouse High School:

- Honors or college prep classes in math, English, biology and western civilization for the ninth grade plus a seventh period course to reinforce writing, reading, problem-solving, critical thinking and research skills.
- Writing workshops and SAT prep at the tenth grade level in addition to English, U.S. history, math and chemistry.
- A tenth grade Advisor Program which emphasizes relationship-building, college exposure and study skills.
- Anatomy and physiology at the eleventh grade level plus English, math, a foreign language, advanced biology or advanced chemistry.
- Microbiology for seniors plus English, math, foreign language, advanced biology, chemistry or physics. The microbiology teachers also assume a mentoring role to the seniors to assist with the college admissions process.

DeWitt Clinton High School:

- Four years of math, including pre-calculus.
- Up to six semesters of research methods.
- Four years of science through physics and microbiology.
- Four years of social studies and three years of foreign language.
- Two semesters of SAT preparation.
- College electives at Lehman College.

A. Philip Randolph Campus High School:

- Eight academic classes per day, five days a week.

- Four years of science begining with advanced biology through microbiology.
- Four years of math through calculus.
- Four years of English and social studies and three years of a foreign language.
- One year of computer skills, one semester of computer programming and performing arts electives.
- Eighty hours of community service.

Instructional Strategies

Macy students and their teachers appear to bring out the best in one another. Macy teachers report that the high level of motivation and engagement that exists among Macy students makes them want to put forth more effort in the classroom and in preparing lessons for their Macy classes. In turn, Macy students say that their teachers' enthusiasm and excitement makes them want to work harder and learn more. This mutually reinforcing high level of enthusiasm, excitement, engagement, and effort among Macy students and their teachers creates a positive classroom environment where both are encouraged to become partners in learning.

Across school sites, there is a great deal of emphasis directed toward developing and implementing a wide variety of instructional techniques and strategies that promote a high level of interaction and performance. How teachers teach and students learn in Macy classrooms vary from one school to another, from one classroom to the next, and from one grade level to the following one. At Hillhouse High School, for example, teachers report that ninth- and tenth-grade classes are more structured than upper level classes and that teaching methods are curriculum specific.

In Macy classrooms, instructional strategies range from the traditional, teacher-directed lectures and discussions to innovative, group problem-solving assignments that encourage cooperative learning.

Learning as a Class Act

Whole group instruction in the traditional teacher-directed lecture format is a mainstay in Macy classrooms. Many Macy teachers employ this instructional technique to present new material and review assignments. The lecture usually begins with an orientation to the lesson and a review of previous material to establish a meaningful context. Information is often delivered in a straightforward manner, and stu-

Sample Sequence of Courses
DeWitt Clinton Macy Program

Grade 9	Grade 10
English Honors	English Honors
Social Studies Honors	Social Studies Honors
Earth Science Regents Honors	Biology Regents Honors
Sequential Math I, II Honors	Sequential Math III, IV Honors
Writing (Expository) Honors	Writing Honors / SAT Prep
Foreign Language	Foreign Language
MMSH Math	Computer Math I, II
Physical Education	Physical Education

Grade 11	Grade 12
English Honors / Speech Honors	English Honors
Social Studies Honors	Social Studies
Physics Honors	Chemistry Honors
Sequential Math V, VI Honors	PreCalculus
Foreign Language	Anatomy and Physiology
SAT Prep / Music	Hygiene / Elective /
Music / Intoduction to Research	College Courses
Physical Education	Physical Education

dents are expected to take notes and ask questions if they don't understand the material. In many cases, the information is not found in students' textbooks but is fresh from a recent journal article or teacher seminar.

Presentations are paced according to the difficulty of the material and to accommodate student differences. Often the pacing is slower than one might expect to find in an accelerated or honors class. Macy students say their teachers make sure everyone understands before moving on. According to Macy students, their teachers are more concerned with students learning the material than they are with getting through a chapter in the text or lesson in a workbook.

Teacher-led discussions usually follow the presentation. At Barton, Tuba City, Randolph, and in several schools in Alabama, teachers are exploring ways to improve questioning techniques so that students

move beyond simple recall in their responses and employ critical and higher order thinking skills. Macy students say that discussions in their Macy classes are more exciting because everyone participates and students disagree with one another. In some classes, students form coalitions to debate controversial issues. Discussions usually end with teacher feedback and a review and summary of key points. Homework reinforces the lesson, and the process begins anew.

Across school sites, Macy students say that teacher questions and student discussions are the two characteristics that set Macy classes apart from other classes. Teacher-directed presentations, questions, and discussions are not necessarily flashy techniques, yet they accomplish two very important objectives. First, they prepare Macy students for college where the professorial lecture is a popular mode of delivery. And second, they require Macy students to become active listeners, use higher levels of cognitive activity, and express their ideas clearly and convincingly.

Learning in Small Groups

Macy students share numerous opportunities to learn from one another in small groups. Small group activities promote student interaction and foster the development of important interpersonal skills. In some Macy classrooms, students are grouped according to skill or achievement level. For example, at Barton, Macy teachers provide remedial instruction to students in homogeneous groups. On other occasions, students are grouped heterogeneously to encourage cooperative learning and peer tutoring. A pre-calculus teacher at Randolph, for instance, structures her class so that students review material and take portions of tests in mixed groups. She explains, "Kids actually talk during the test . . . they work their logic out."

At Barton, students are encouraged to work together in groups during before- and after-school study sessions. In anatomy and physiology classes at Tuba City, Macy seniors employ group problem-solving skills to diagnose maladies of the human body as presented in patient case studies. In the Macy elective at Hillhouse, students engage in group research projects and discuss peer and family relationships and social problems in small groups.

Other group activities foster healthy competition. At CAMPSTAR, for example, student groups compete in academic quiz bowls. Each group is responsible for creating its own identity, complete with group name and banner. At Hillhouse, students also compete in small groups. An eleventh grader comments, "When we're divided into groups, I like that . . . in the real world you're competing. I like how we compete. Never one group dominates."

Learning through the Airwaves

In 1988, Macy students from 34 schools in Alabama and from Tuba City, Arizona began participating in the University of Alabama's Bio-Prep program by "tuning in" to instruction that is being transmitted to them, live, via satellite. During "class," these students are joined by other students located at 244 schools across the nation.

This electronic linkage system is known as the TI-IN United Star Network, a federally-funded program that is administered by TI-IN Network, Inc. Private organizations and public education institutions have combined their resources to develop advanced curricula in areas such as mathematics, science and foreign language and bring them to disadvantaged schools that lack the resources to offer competitive programming to their students. TI-IN Network also offers professional development programs that help teachers and staff to keep abreast of our nation's growing bank of knowledge.

Students view courses on a television screen and are expected to participate as they would in any classroom. Interactive measures such as a cordless telephone, electronic writing screen and computer printers allow students to ask questions that can be heard by all students viewing the program. Not only can instructors respond immediately to specific questions, they also can provide students with handout materials that are reproduced by printers at each location.

As a partner of the TI-IN Network, The University of Alabama is able to share its Bio-Prep program not only with local high school students, but with students throughout the country.

Fostering Independence

Though Macy teachers place a high premium on cooperative and competitive learning experiences, they also acknowledge the importance of encouraging students to accept responsibility for their own learning. Macy students say they are not "spoon fed" material or assignments. Often they must research background information on their own. According to a Macy student in Alabama, her peers in non-Macy classes receive more directions on assignments. Macy teachers, she says, "give you an example or two and then the rest you have to do on your own." Another student at Randolph High School in Harlem says her Macy bacteriology teacher "doesn't really tell you things. He wants

you to ask him and then he'll talk about it . . . you find out about it . . . he just gets you started."

Macy teachers and staff are aware of their students' interests and aspirations and provide opportunities for individual research and internships. At Hillhouse High School, for example, several Macy students work at hospitals and health centers in New Haven. A Macy student in Alabama conducted independent research on genetic engineering at the University of Alabama Medical Sciences Library. At Barton, Macy students may take advantage of research opportunities in biochemistry and neurology at the State University of New York Health Sciences Center.

Across schools, Macy students demonstrate their ability to pursue independent scientific research and inquiry through their participation in science fairs and other academic competitions. In fact, in 1989, four Barton students won first prizes in science fair competitions, and a Randolph student earned the distinctive honor of being a national Westinghouse Science Fair Winner for independent research in neurotransmitters.

Perhaps the comment of a tenth-grade student in Alabama best summarizes the emphasis Macy teachers and staff place on helping students become independent learners and fostering individual growth. The student says, "When you get into this program, you start growing as a person because it does allow you to be an individual. So much is expected of you."

Hands-On Learning

In many Macy classes, students become active learners as they engage in hands-on activities that require them to apply theories and principles discussed in class to laboratory or real-life situations. In Alabama, for example, the vector van travels to schools and provides students the opportunity to roll up their shirtsleeves and use highly sophisticated laboratory equipment to study DNA molecules. The experience is part of the Cold Spring Harbor Laboratory program which is also offered to Macy students at other school sites.

Macy students in Tuba City and in Alabama have planned field trips to theme parks to apply the principles of motion and gravity learned in physics class to high-speed rides. In biological chemistry, Macy students at Tuba City learn advanced instrument analysis and journal recording methods in a laboratory setting. At Hillhouse, the ninth graders in the Macy elective master keyboard skills and word processing in the computer lab and practice scientific research skills in the science lab.

For many Macy students, these experiences are highly engaging because they make learning come alive. They introduce and reinforce skills that are critical to students' success in undergraduate and graduate

level work in the medical sciences. Hands-on learning underscores the importance of developing competency, precision, and higher order cognitive skills.

Highly Integrated Learning

Learning in the Macy program is not divided up into distinct instructional territories, nor do Macy teachers fence themselves in by content areas. Across Macy project sites, teachers collaborate so that what students learn in one class carries over to other classes.

Macy teachers across all content areas emphasize vocabulary development, written and oral expression, and reading comprehension. At Barton, for example, Macy students learn fifty vocabulary words each week. The weekly vocabulary list might include terms from biology or geometry classes -- not just English class. The Medical Issues and Ethics course for upper level students at Barton integrates writing, reading, and research skills into the study of current issues confronting medical professionals.

The Touchstones Project at Tuba City and in Alabama fosters the development of oral expression and critical thinking skills. As students engage in the close reading and analysis of excerpts from classical literary texts, they become actively involved in interpreting and shaping meaning. Such skills are applicable not only in the study of language and literature, but across all subject areas. (See Sidebar on Touchstones.)

In the ninth-grade Macy math/physics course at Tuba City High School, students use math principles to solve problems in physics. In the tenth-grade biological chemistry course, Tuba City Macy students apply the principles of chemistry to the college-level study of biology. The eleventh-grade American studies course at Tuba City also integrates the study of two traditionally distinctive subject areas -- American literature and American history. At Randolph, Macy students may take as an art elective a scientific drawing course. And in the Macy elective at Hillhouse, ninth graders not only learn how to calculate the cost of a college education but also how to do word analogies and examine fossils.

For the majority of Macy students, learning is not isolated and compartmentalized but highly integrated across content areas and grade levels. What is learned in one course has immediate application in another. A ninth grader at Hillhouse High School states, "I think we're learning all the subjects in one class." This integrated approach helps Macy students see relevance and value in what they're doing and learning; it expands their perspectives beyond the traditional math, science, or English classroom to the world-at-large where their success will hinge upon the mastery and application of multiple, interrelated skills.

Touchstones: A Thinking Curriculum

Individual participation in group discussion about classical literature is the theme of the Touchstones Curriculum used by Macy/Bio-Prep students in Alabama and Tuba City schools. Students shape the of their thoughts and opinions through cooperative discussion with other students, rather than having teachers direct their responses through lecture and question and answer sessions.

The primary objective of Touchstones is to help students to develop abilities, convictions and expectations that will remain with them beyond the classroom door – qualities that will serve them in all situations throughout their lives.

Students benefit from their exposure to the Touchstones Curriculum as they progress through their readings and discussions. Because students interact less with the teacher and more with other students, they develop a sense of self-reliance. They see that their role and the teacher's role has changed and learn that it is possible to change one's self-perception and one's perception of others.

By grappling with the type of philosophical questions that are prompted by the Touchstone readings, students grow to value the contributions of others in their group. They realize that many perspectives are necessary to address complex issues and that cooperation is necessary to obtain those perspectives. Over time, students learn to trust their ability to offer reasoned opinions and participate more fully in the world around them, and to respond appropriately and well to new situations.

Monitoring and Evaluating Progress

Frequent monitoring and evaluation of student progress through formal and informal means is a critical component of the Macy program. Macy students report that they have more tests than their peers in non-Macy classes and that their tests are harder. They claim they have considerably more homework than non-Macy students and that their homework assignments are often graded.

Across sites, Macy students note that their Macy teachers grade more strictly than non-Macy teachers. One young lady says of her Macy microbiology teacher, "She shows she cares by not giving us just any grade on a paper. She makes us work for our grade. Some teachers give

out A's too easily." The teachers, too, claim they use a more stringent grading system and hold students in their Macy classes to higher standards. One teacher admits, "I'm a hard grader. I push them, make them work to get A's and B's."

According to Macy teachers, high standards and regular feedback about performance are important to high-achieving and high-aspiring Macy students. Tests, quizzes, and graded homework, suggested Macy teachers, motivate students; they know they have to stay on top of the material as well as readings that may be assigned but not discussed in class.

Continuous monitoring and frequent evaluation also help teachers make informed decisions about pacing instruction for the whole class and whether or not an individual needs help. When a student is having difficulty, Macy teachers are apt to question their own teaching methods first rather than blaming the student. They consult with one another and the student on strategies to help him or her succeed. In this way, teachers report they are usually able to address a student's need for remediation within the classroom rather than assigning him or her to a "pull out" program.

Macy teachers claim that frequent evaluation and feedback offer students a sense of focus; they see what's important and they have a chance to clarify misunderstandings. They have an opportunity to apply what they've learned about a subject and the test-taking strategies they've acquired through special Macy workshops. Most importantly, however, teacher evaluation and feedback tell students how they're doing in a particular class and that someone cares about their progress and about them as individuals.

Managing Students and Instruction

A goal of Macy teachers is to maximize the amount of time students are engaged with the subject matter and minimize the time spent on administrative details and discipline. In Macy classes across school sites, the portion of the period devoted to instruction almost always exceeds 80 percent. Both students and teachers appear prepared to learn and seem committed to make the best use of their time together. In fact, it is the students who put pressure on one another to pay attention and stay on task. One comment from a student at Hillhouse High School describes this peer pressure: "Macy students are here to work. They won't distract you while you're trying to get your education. Some people don't want it and you know they're not in the program so you know you're going to get your education that day."

Although the emotional environments of Macy classrooms consistently reflect a strong commitment to academic tasks, the physical environments vary. Many Macy teachers organize their classrooms in

a traditional manner with desks aligned in rows facing the front of the room. Some teachers arrange seats in clusters for small group work or in a semi-circle to encourage discussion. In Tuba City, several teachers have divided their classrooms into a lab or computer work area and general purpose area. Students and teachers report that the way Macy classrooms are arranged conveys a sense of order and purpose yet encourages a high level of activity.

Macy teachers are not magicians, and what happens in their classrooms is not wizardry. Like many of their non-Macy colleagues, they are devoted educators who work within traditional secondary school structures and, in some cases, in facilities that are inadequate and in need of costly renovation. Like many of their non-Macy colleagues, they are committed to improving their effectiveness, and to finding better ways to deliver information, engage students in meaningful learning activities, stimulate cooperation and collaboration among their students, and foster independence and individual growth.

And like their non-Macy colleagues, they can only speculate about the impact they have had on their students. Surely, many Macy students have made significant gains in their level of academic achievement. And numerous Macy students attribute their academic successes to an individual Macy teacher. But to suggest increases in Macy student performance are the direct result of a particular instructional strategy or technique would be unfounded. What seems clear, however, is that Macy teachers and staff create a positive learning environment where students and teachers feel good about themselves and what they're accomplishing and where teachers are actively involved in solving problems and improving the instructional program.

Issues and Conclusions

This examination of the Macy high school programs reveals an educational improvement effort that clearly is producing some very impressive results. College attendance rates exceed 90 percent. Standardized measures of achievement show marked gains. And the Macy students widely demonstrate high levels of confidence, goal orientation, and an unmistakable joy in learning.

As indicated previously, however, these programs are not magic formulas which will resolve all the problems plaguing today's high schools. There is nothing particularly fancy or enchanted about the elements the programs employ; the teachers are not charismatic marvels and their instructional methods are mostly standard fare. In fact, most of the Macy programs' approach involves practices and strategies which already have been repeatedly validated as effective measures in fostering achievement.

The programs might simply be characterized as "good schooling." But unfortunately, this level of "good schooling" is too often a rare occurrence and therefore, the Macy programs are worthy of some keen attention from the larger education arena. As the nation's secondary schools struggle to foster improved achievement among their students — especially poor and minority students — the Macy programs should stand as a model for widespread replication.

Successful replication of these efforts, however, will require more than merely adopting the "trappings" of the existing programs. There's more to the programs described here than a tough curriculum, longer school day and more staff development. All too often, replication attempts fall short of the mark because they employ too literal a translation of

program components without paying sufficient attention to the dynamics which made the original effort successful or to the related issues which can positively or negatively affect the program.

This concluding chapter examines these important issues and program dynamics, addressing such questions as: Do the Macy programs draw resources away from other needed school services? What is the impact of the program on the rest of the school? What are the key elements and inter-relationships among those elements which account for the programs' success?

Admissions Criteria

One significant issue deserving careful consideration is the impact of admissions criteria on the Macy programs. Some might contend, for example, that it is the "kind" of student which accounts for the programs' success; others might say it's because the students choose to participate in these programs. The relationship of choice and selection to the programs' record of student success is not completely clear. However, it is evident that the Macy students described in this report enter the programs as neither the very brightest nor the most educationally needy. They are those in the middle, not necessarily identified as "gifted and talented" and not requiring remedial services. They have academic records which are average to slightly above average.

In all likelihood, most of these students would graduate from high school and some might complete college. But would ninety percent or more of them be seeking degrees from four-year institutions? Would forty percent of them pursue studies in math, science, engineering, and health-related fields? Would the Tuba City youngster who had planned to be a fireman ever set his sights on becoming a veterinarian?

It seems improbable that these types of outcomes could be attributed to the mere fact that the students elect to be a part of the program or to admissions criteria which require little more than "on grade level" reading and math scores.

However, most Macy students do appear to enter the program with one characteristic in common — motivation. Repeatedly, the Macy teachers describe the students as enthusiastic and willing learners. If this is generally true, then the programs may have a decided advantage from the onset. However, as other less successful programs to boost student achievement have shown, the greater challenge may be in sustaining that early motivation throughout four years of a very demanding course of study.

A key factor in the Macy programs' success, therefore, appears to be the concerted effort to maintain and promote student motivation. The programs' emphasis on developing students' beliefs in their abilities and the extensive academic and personal support to ensure student

accomplishments are important strategies for perpetuating (or generating) student motivation.

Equity of Resources

One criticism frequently made of educational programs requiring special allocations of human and financial resources is that the effort drains away money and energy from programs for other students.

The Macy program coordinators and teachers contend, however, that the overall impact of the program has been to enhance the total school, rather than detract from the rest of the school.

Macy teachers, for example, contend that because they teach not only students in the Macy program but also other students as well, they can bring the fruits of their Macy professional development training to all their classes. School administrators agree that the knowledge gained from the Macy teacher training opportunities often is shared among all teachers and therefore, has a widespread positive effect on the school.

Although teachers will readily acknowledge that they spend more time in preparation for their Macy classes, they believe that this does not necessarily mean that they then have to "short change" their other students. Instead, they report, the extra preparation time for Macy classes is balanced out by the decreased time they need to devote to reviewing Macy students' work which generally has fewer errors and by the additional time they must give their other classes to explain lessons and assignments in greater detail. Additionally, the teachers believe that the effort they put forth in preparing for the Macy classes helps them to be prepared more thoroughly for teaching the other students.

Teachers, administrators and parents also report that the development of the Macy program in their schools has helped to raise academic standards throughout the school as well as improved the schools' image. At some of the Alabama sites, for example, teachers report that the numbers of students taking courses such as algebra and geometry increased significantly since the Macy program was launched in their schools. Other school leaders claim that their general student population now exhibits a greater respect for academic pursuits. And the Macy programs are especially credited with "turning around" the New York City schools in which they are housed.

Program Costs

The issue of the programs' financial impact on the schools is more complex and in these times of limited school funding, more controversial. Currently, as the Macy programs receive a good deal of their financial support from an external source — the foundation — the required program funds are not directly competing with other school programs for financial allocations from the school administrators.

Nevertheless, school funds in some sites are used to reduce class size and to add an additional period to the school day. These program costs undoubtedly are routinely subject to review and are weighed against all other school funding priorities. As the Macy programs have increasingly resulted in improved student achievement, however, most administrators have viewed their financial investments in the program as yielding a substantial return.

The costs associated with the programs, of course, become of greater concern if borne entirely by the school district. Program costs might exceed $400 per student a year if a school system were to implement all components of the existing programs without any external or partnership arrangements. However, as the Alabama program sites have demonstrated, the individual school costs can be kept to a minimum by working collaboratively with other schools and with a university partner. Schools interested in initiating Macy programs might also reduce expenditures by forging private sector collaborations.

Student Retention

As mentioned previously, one early problem area for the Macy programs was the relatively high number of students who entered the program but later dropped out. This phenomenon illustrated that initiating a rigorous curriculum and high academic standards would, in and of themselves, not produce greater student achievement. The programs which were designed with a variety of academic supports had to re-examine and strengthen those supports, particularly for the entering freshmen and second-year students.

The retention of students in the programs has increased significantly; program administrators and teachers have instituted a variety of additional measures to help students meet the demands of the program. For instance, counseling services were refocused to the earlier grades, peer tutoring sessions and after-school tutorials were increased, and greater emphasis was placed on closely monitoring students' individual progress.

"My grandfather's a medicine man. He tells me to go running in the morning and you'll get better things in life cause you get up early to meet the sun."

Tuba City Junior

Specific student support strategies such as these need to be part of any effort to replicate the Macy programs' success.

Preventing Stagnation

A common occurrence in newly launched educational efforts is that they tend to "run out of steam" after the initial excitement and first blush of success have worn off. The Macy programs, after nine years (four years in some sites) appear to have not only staved off stagnation, but actually gained momentum.

The key to the programs' staying power appears to be attributable to their flexibility and emphasis on shared decision-making. The pro-

grams do not grow stale because the teachers can — and do — continually update and revise the program components — the curriculum, the instructional techniques, the support services, etc. The program rarely is the same from year to year, the teachers contend. The program coordinators agree, claiming that because the teachers work collaboratively on the program and have some decision-making control in the process, they tend always to be searching for ways to improve the effort.

Elements of Success

In addition to the issues discussed above, the examination of the Macy programs — especially with regard to the development of any replication plans — requires the identification of program elements and the dynamics among those elements which appear to account for the programs' strengths and accomplishments. Conclusions regarding such components of the Macy programs are presented below.

A Rigorous Curriculum

The cornerstone of the Macy program approach is its curriculum. The standards of achievement for Macy students are considerably higher than in most high schools and greater than in many other kinds of honors programs. However, the curriculum is more than "hard" courses and extra homework. Furthermore, there is no one prescribed curriculum for the Macy program; each program site has developed its own particular courses and course sequences suited to its students.

The curriculum at each site can be described as "evolving." As teachers learn new skills and course content and as they identify new or different student needs, the curriculum often is altered to accommodate these improvements. Also, each Macy site has placed an emphasis on integrating course content across all subjects. Tuba City's teacher-designed course in physics and math is an example of such an effort.

Such flexibility and innovation in the curriculum are important components of the Macy programs' success. Teacher participation in curricular development not only helps keep the classes fresh and directly related to the particular educational needs of the students, but also promotes greater teacher commitment to the instructional materials and methodology.

Academic Support

The more exacting academic demands on Macy students, however, alone can not account for the Macy students' accomplishments. The well-developed notion of an academic "safety net" is central to the Macy students' success. Simply put, these students begin with a belief that they can succeed and then they are given the means with which they do

succeed. The tutoring, test preparations, extensive counseling, and study groups all contribute to the students' abilities to master the requirements of a demanding curriculum.

The many sources of academic support for students in the Macy programs reflects a basic, underlying principle in the programs' design: students can meet the demands of a more challenging course of study if they are provided with the range of assistance they might require in order to master those demands.

As noted earlier, the need for assistance might be even greater than was originally anticipated in the program design. One of the Macy programs' strengths has been to monitor students' needs for assistance continually and to develop ways to deliver the required help.

School Culture

Taken straight from the pages of current business management journals, the Macy programs have developed a clear mission which is understood and shared by students and teachers alike. Each program site has an underlying structure of norms, expectations and beliefs for all involved in the program. These norms and expectations are communicated very clearly and consistently to all program participants. Examples of such norms are: "Teachers and students will come to class prepared;" "Part of the teaching role is to discover and respect the individuality of all students;" "Wasting class time is not acceptable behavior."

From the very beginning of a Macy student's high school career, these common beliefs and norms are communicated clearly and repeatedly. The summer orientation sessions such as CAMPSTAR focus on academic skills but also inculcate a Macy "mindset." Those program values and beliefs are then consistently reinforced and communicated during the school year.

The Macy culture plays an integral role in setting and maintaining the high expectations which students and teachers share and openly express. And in turn, the students develop a keen sense of self-confidence and personal goals.

A Community of Caring

Akin to the Macy culture is the pervasive atmosphere in the Macy programs that the students are surrounded by caring adults. Students explain this is one of the key factors which distinguishes Macy classes from the "regular" high school classes. The Macy programs, unlike so many secondary education approaches, readily acknowledge the simple reality that all children, especially those of high school age, need more adult guidance. While adolescents are often reluctant to admit how much importance they place upon adult attention and understanding, the Macy students' overwhelmingly positive response to the presence of

adults who they know are "on my side" is ample testimony to its importance.

Interestingly, it is this aspect of the Macy programs which the students most often credit for their sustained interest in the program. Most Macy students point to one or more teachers, counselors or administrators who have taken a particular interest in their academic and personal development.

The Macy programs' attention to students' affective needs as well as their academic progress is another essential element in the programs' success. The shared culture, caring adult presence, and informal and formal counseling activities appear to reinforce the students' academic safety net and further the students' abilities to master the scholastic challenges of the program.

Teacher Training

Although few Macy teachers or administrators use the terms "empowerment" or "school-based management," several of these concepts are present in their daily involvement with the program. A substantial, continuous investment is made in the teachers' professional development. Training for teachers is another prominent feature of the Macy program approach and is a significant part of the programs' overall success.

As mentioned earlier, this training appears not only to produce benefits in terms of student learning, but also positively affects the school's entire teaching corps because Macy teachers are sharing their training experiences with their colleagues. The training not only increases the teachers' knowledge base but also reduces the isolation of classroom teaching by providing opportunities to share ideas and interact with other teachers pursuing similar teaching goals.

In addition to the professional development activities afforded teachers, the participatory role of teachers in the programs has evolved as the programs developed and is now an essential ingredient in the program design. At most sites, the teachers share in the decision-making about virtually all aspects of the program. Staff development activities frequently are the direct result of teachers' expressed needs and as noted earlier, the development of curricula often is the work of the local teachers.

Each of the Macy programs has the special imprint of those who are responsible for making the program succeed. This high level of personal investment and energies is not only an important factor in not only the programs' current and past accomplishments, but also one dynamic which keeps the programs in a state of continuous improvement.

Instructional Strategies

Another signature element in the Macy programs is the emphasis placed upon developing and implementing a wide variety of instructional techniques and strategies. While Macy teachers rely on traditional methods of didactic questioning and whole-class instruction, they also infuse opportunities for independent inquiry and hands-on experiences. Group problem-solving and cooperative learning activities also are strategies which appear to be fostering positive results with the students.

This variety of instruction is a direct result of the teachers' continuous exposure to professional development opportunities and to the emphasis on collaborative work among the teachers.

Enrichment Activities

Undergirding all the curricular, instructional and support activities is a wealth of "real world" experiences which supplement school-based learning in the Macy programs. The field trips, internships, college studies, laboratory experiences, guest lectures, etc., provide students and teachers with another important dimension for learning. These activities give students firsthand experience with how their current studies relate to their planned college pursuits and eventual careers.

A Balanced Mix

All of the program elements which contribute to the Macy programs' effectiveness were not present in the original designs for the programs. Several emerged painstakingly from trial and error and painstaking efforts by individual teachers, parents and program administrators.

Nevertheless, over time, the Macy programs have forged a winning combination of interdependent affective and academic strategies which have led to a remarkable record of student success. The demanding curriculum by itself is not enough to produce these results and neither is a caring environment. The curriculum is enhanced by the substantive academic support activities. The guidance component augments the coursework and the career exposure, college visits, guest speakers and all the many enrichment activities undergird and reinforce all aspects of the program. All program activity, in fact, is pointed in one direction: to help students achieve.

It is this singular focus and the mutually reinforcing nature of the program elements which seem to provide students with the desire and self-confidence as well as the abilities to stretch for higher scholastic achievement. Likewise, it is the synergy of the program components and their direct role in creating and shaping those elements which the Macy teachers and administrators find so personally gratifying and professionally rewarding.

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Expanding Horizons

A Vision for Our High Schools

TECHNICAL REPORT

A Report from
The McKenzie Group
to

The Josiah Macy, Jr. Foundation

October 1990

The Josiah Macy, Jr. Foundation
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Expanding Horizons
A Vision for Our High Schools

Technical Report

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University of Alabama Medical School Biomedical Science Preparation Program

Background

Few high school students in rural western Alabama go on to college and of those who do enter college, even fewer go on to graduate school. The University of Alabama, in cooperation with the Macy Foundation, developed the Biomedical Sciences Preparation (Bio-Prep) Program to increase the number of young people who are prepared and choose to pursue collegiate and professional studies.

The Bio-Prep program is operated by the University of Alabama Medical School at Tuscaloosa. The program began in 1982 with placement in five secondary schools. By 1989, the program had expanded to include thirty-four schools located primarily in the rural counties surrounding Tuscaloosa. As participants in the University-operated program, school staff set up the program, implement the curriculum, and provide teachers and students access to the University-sponsored Macy activities. The leadership and coordination of the University staff are central features of the Macy programs in Alabama. The University defines the parameters of the program, develops the curriculum in cooperation with participating teachers, provides staff development to teachers, and operates a summer program for students.

The objectives of the Bio-Prep program target student academic preparation and performance. The first objective is to increase students' academic competency in mathematics, science, social studies and oral and written expression to a level that is sufficient for them to successfully engage in college level work. The second objective is to orient students to the health care professions. The third program objective is to instill in students the value of rural life and to increase their awareness of the contributions they can make as professional members of the rural community. Approximately 144 students have graduated from the Macy Bio-Medical programs in Alabama since 1982.

Student Characteristics

In 1988-89, 1,597 students participated in the Bio-Prep program. Thirty-eight percent of the students were African American and 62 percent were white. In the 1989-90 school year, the percentage of minority students in the program increased to 49%. Fifty-eight percent of the students were female and 42 percent male. Twenty-six percent were eligible for free-or-reduced price lunches, an indicator of low socioeconomic status. Forty-two percent of the Macy students' mothers are high school graduates, and 14 percent are college graduates. Twenty percent of the Macy students live in households headed by a single parent.

Student Recruitment and Selection

An interdisciplinary team comprised of guidance counselors, teachers, and administrators at each school site select the Macy students. Selection criteria are recommended by the University. Although there are some local options, the primary criteria include achievement at the ninth-grade level in reading and math on the Stanford Achievement Test and an academic grade average of 80 percent. Teacher recommendation and assessment of student motivation and interest in the program also are considered in the selection process.

Eligible students and their parents are invited to an orientation session conducted by University and school personnel. Parents and students learn about program objectives, requirements, and benefits. If more students choose to participate in the program than can be accommodated, final student selection is made on a random basis.

Most students select the program because it represents the best college preparatory option available in their

school. At some schools, the Macy program is the only college preparatory program available. Students do not see the regular curriculum as providing either a viable college preparatory curriculum or one that will help them be as prepared or as competitive as they would want to be.

According to students, an additional incentive for selecting the program is the University enrichment program. They do not see the program as strictly preparation for college majors in either science or pre-medicine; instead they view the program as a general college preparatory program. Parents see the program as enhancing their childrens' performance and ability to compete more successfully for college placements.

The Macy Curriculum

Macy students must take four years of math, science, English, and social studies and two years of a foreign language. Students must maintain an 80 percent grade average to remain in the program. Additionally, the program requires students to participate in special academic and college orientation programs at the University, including a summer academic enrichment program.

The Macy curriculum incorporates high quality innovative components, such as "Touchstones" and a course in anatomy and physiology. The Touchstones curriculum uses excerpts from classical literature to help students develop critical thinking and problem-solving skills. These components are designed to foster the development of students' analytical and to encourage independent learning. Courses such as physics, advanced placement chemistry, anatomy and physiology, history, math, and English have been developed and upgraded to a level sufficient for college preparation, as defined by professors teaching undergraduates at the University of Alabama.

The Ti-In United Star Network, an interactive satellite broadcasting system, expands the Macy curriculum by providing many schools with classroom instruction and teacher training in subjects not available through the school systems. In 1989-90, the University will broadcast the anatomy and physiology course over the Ti-In Network. A total of 56 schools, including several Macy program sites, now participate in the satellite network.

In some of the smaller, rural schools, the new or expanded Macy curriculum represents the development of a complete college preparatory program for the first time. For some of the larger Alabama high schools, the Macy program provides an honors-level college preparatory program not previously available. Teachers and parents feel that the course requirements are more demanding than the non-Macy academic program and that the curriculum for Macy students generally goes beyond that expected in the same course for non-Macy students.

Instructional Strategies

A variety of instructional strategies are employed in Macy classes. The Touchstones program provides a forum for students to discuss readings from classical literary texts and stimulates close, critical reading of the texts and opportunities for cooperative learning.

The DNA Literacy Program, in cooperation with Cold Spring Harbor Laboratory, offers students and teachers the chance to engage in hands-on learning as they use the latest technology to study DNA molecules. Laboratory demonstrations are performed on-site in the traveling "Vector Van" that visits schools around the state.

The more traditional lecture format is also used by many Macy teachers. Small group, individualized, and whole class instructional strategies are employed to accommodate varying student learning styles and rates. In the larger schools, the Macy students are grouped homogeneously for most classes. In the smaller schools, where there are only one or two math teachers, other qualified students take courses along with Macy students.

Most Macy classrooms are organized traditionally with rows of chairs facing the front of the classroom. Academic instruction exceeds 80 percent of the instructional period. Little time is devoted to disciplining the students. Teacher planning is in evidence, and class sessions begin with an effective orientation to the lesson and a review of previous material when appropriate. However, pacing of the lesson is often slower than one would expect in an accelerated class. At the end of a lesson, teachers try to bring closure to the lesson by providing summary and feedback.

Students' preparation for the lesson, their level of engagement, their use of time and the quality of class work are all indicators of the quality of student learning. Macy students appear to be challenged intellectually and motivated by their teachers and the level of instruction. They find that their Macy teachers are well-prepared and hold high standards for student performance and achievement.

Student Support Services

Students receive guidance and information regarding class selection and about options for college fields of study. Some guidance offices also help students build portfolios for strengthening university application and scholarship opportunities. Counselors are very supportive of the Macy program and students. They recognize the difference the program can make in preparing students for college; yet, in a number of the rural schools they are responsible for the entire student body, not just the students in the program. At one school, for example, the student-to-counselor ratio is 400:1. For this reason, school counselors find it difficult to provide the close day-to-day support and monitoring that is characteristic of other Macy programs.

Ninth- and tenth-grade students receive considerable support from their teachers. Several Macy students at one high school report that Macy teachers have played a critical role in their decision to stay in the program.

Parents, too, play an important role in providing encouragement and support. At several schools, parents have developed an extensive support network that includes parent support groups, family coaching programs, parent-sponsored evening study sessions, fundraising activities, and parent workshops on the college and financial aid application process.

Enrichment Activities

In the summer, the University of Alabama operates an enrichment program for Macy students which helps them become accustomed to the college environment, provides opportunities to work on skill development, and offers participants opportunities to establish supportive relationships with Macy students from other high schools. In addition, student workshops and special seminars related to the Macy curriculum are held during the school year. In 1988-89, Bio-Prep students attended lectures by professional scientists, preparatory sessions for standardized tests, and the University theater production of Macbeth.

Special college orientation programs also are held during the school year. In some schools, students participate in academic olympics and competitive contests among other schools in the state. Students also are offered opportunities to participate in cultural and artistic experiences that enhance their overall intellectual and aesthetic development.

Parents, teachers and students are enthusiastic about the enrichment activities provided by the Macy program. Parents say that the extra-curricular activities in Macy have positively influenced their childrens' maturity. They view the opportunities to attend seminars and special programs on the University's campus as important motivating experiences. Many of the parents feel that these campus visits are instrumental in helping their child develop aspirations to attend college. Students comment on how these enrichment activities make them feel special and valued by their school and family. They also view the campus events as valuable experiences which facilitate their orientation to the academic environment they expect to find on a college campus.

Staff Development

The teachers have participated in several Macy-funded workshops and summer institutes. They have participated in curriculum development activities and attended workshops designed to upgrade their knowledge of course content. Staff development resource persons are sometimes brought to the University to work with Macy teachers. University staff also make periodic visits to schools to work with teachers. Staff development programs help teachers expand their knowledge of the curriculum and improve the delivery of instruction in the Macy classes.

In 1988-89, 22 workshops were offered to Macy teachers through the University of Alabama. The workshops covered topics in all content areas. Some Macy teachers took part in a month-long summer seminar co-sponsored by The National Endowment for the Humanities and the University. This seminar focused on American literature of the 1920's and 1930's. Other Macy teachers participated in a series of Touchstone workshops and the Cold Spring Harbor DNA Literacy Program. Teachers are beginning to share their expertise with colleagues at their schools and around the region and state.

Student and Teacher Views of the Program

Most Macy students report that the most beneficial aspects of the program are the more challenging curriculum and being with other highly motivated students. Students also recognize the association with the University as an important benefit in that it provides numerous opportunities for learning beyond the classroom.

Macy students see their teachers as being different from their non-Macy instructors. They say Macy teachers expect and demand more from their students, and they generally have better relationships with their students than other teachers in the school. When students have trouble in school or at home, they find their teachers are a greater source of support than counselors.

Macy teachers claim the students and their positive attitudes are the strongest factors contributing to the success of the program. They, too, acknowledge the significant role of the University in providing staff development, student enrichment activities, and program leadership.

Teachers believe their participation in the program has resulted in greater use of different and more varied teaching strategies in the classroom. They say the greatest difference between Macy and other teachers in the school is in the time and effort Macy teachers spend preparing for their courses. They note that Macy students have considerably better work habits than students not in the program.

Teachers believe students benefit from participation in the program in three ways: improved academic performance in high school, increased chance of college acceptance, and increased chance of doing well in college.

Macy teachers also report the program benefits the entire school by improving the overall academic climate.

If the program were withdrawn, teachers say student motivation, staff morale, and parent involvement would be negatively affected.

University Affiliation

The University of Alabama provides the leadership and resources for extensive curriculum development activities aimed at improving the college preparatory coursework offered in the participating high schools. Macy resources are used to underwrite the costs of curriculum development workshops and staff development programs for the teachers. The program staff members at the University provide on-site technical assistance and consultation to teachers. This is an extremely important and characteristic element of the Macy programs in Alabama.

The program staff and professors from the University, along with high school faculty, lead the efforts to develop curriculum guides and improve instruction for advanced courses in math, science and English.

Issues and Concerns

Both University and school staff have invested a great deal of time and resources in expanding and enriching the curriculum across major content areas. As a result, little attention has been directed toward strengthening the guidance and counseling components at local schools. The retention of ninth and tenth graders and the lack of adequate support services are two major areas of concern. Many students enter the program without a clear understanding of what will be expected of them and without the academic skills needed to do well. Once in the program, they realize that the rigorous curriculum allows few options for electives and extra-curricular activities. Under pressure from their non-Macy peers, some of these students withdraw from the program. Others leave because they cannot handle the academic demands. Closer monitoring of student performance, more provisions for remedial instruction, and more emphasis on the purpose, expectations, and benefits of the program during orientation are crucial to improving student retention across the Alabama program sites.

Although the program has been instrumental in expanding and enriching the curriculum for college-bound students in high schools across the state, both teachers and students recognize the need for continued emphasis on improving the quality of instruction. Teachers are concerned that as the program expands to more schools, the support from the University of Alabama will decrease and opportunities for communicating with University staff and colleagues from other Macy schools will become less frequent. Students, too, are concerned that program expansion will result in fewer enrichment activities sponsored by the University.

Program Outcomes

The Alabama schools housing Macy programs have experienced a significant improvement in the quality of their college-preparatory and honors programs as a result of their participation. More advanced courses have been added to the curriculum in all of the participating schools, and the curriculum for most Macy courses has been upgraded and modified. Parents, teachers, and students attest to the increased rigor and challenge of the curriculum. Students particularly feel they are working considerably harder than their other college-bound classmates; they also believe they are evaluated more rigorously. School and University staff believe the availability of this advanced curriculum has resulted in increased student self-confidence and improved performance.

In light of the more challenging curriculum and higher standards for performance, the average GPA of 83.31, for Macy students in all grades, is quite impressive. In the past three years, the program has graduated approximately 144 students. One hundred percent of the students from the first 5 demonstration schools have continued their education, 74 percent of them on scholarships. Most of these students have gone on to four year colleges in the state.

Future Directions

The Alabama program has upgraded the academic programs and directly benefited scores of students in a variety of high school settings. The program also has shown that teacher skills can be upgraded to meet the challenge of an advanced curriculum and that community and parental support can be developed to enhance the opportunities for their childrens' future.

The Macy program is an integral part of the development plans of the University and will certainly continue after Macy funds have been withdrawn. University and school staff members believe the program concept and operation is transportable and can operate effectively in many Alabama high schools.

If the program is going to continue to prosper, the University requires support not only from the more active involvement of people at local school sites, but also from other agencies, including the education department at the University. The program would be an ideal learning lab program for graduate students, and it would provide opportunities for talented faculty to serve as advisors to the Macy schools.

Clara Barton High School
The Macy Medical Science Institute
Brooklyn, New York

Background

The Clara Barton High School for Health Professions, located in Brooklyn, New York, has a strong tradition of training students in health care occupations. Although the school's physical plant has deteriorated considerably over the years, the educational program for providing vocational training in health care remains strong. The school has been converted from an all-girls to a co-educational school, but of females still comprise close to 90 percent of the enrollment. The Macy program began in 1982 and was one of the original program sites.

The primary goal of introducing the Macy program to Clara Barton High School was to change the orientation of the school from vocational to college preparatory. The Macy program seemed a logical choice for this purpose because of its emphasis on the development of an academic program of excellence that enables minority students to gain access to competitive colleges and major in science and mathematics. To achieve this goal, the high school instituted a comprehensive program of educational improvement that resulted in an improved college preparatory program, personalized guidance services, and opportunities for high school students to study at colleges and medical centers.

Student Characteristics

Two thousand three hundred students were enrolled at Clara Barton in 1988-89, 400 of whom were in the Macy program. Eighty-two percent of the students in the school were African American, 16 percent Hispanic, and 2 percent Asian. Sixty-two percent of the Barton student body are eligible for free or reduced price lunches, qualifying the high school for Chapter I compensatory education funds.

Of the 495 students entering Barton High School in fall 1988, 72 percent of the ninth graders and 59 percent of the tenth graders were at the 50th percentile or higher in reading. Fifty percent of the ninth- and tenth-grade classes performed at grade level or above in math.

The Macy student population at Barton is largely minority, female, and economically disadvantaged. Of the 400 Macy students, 72 percent are African American, 20 percent are Hispanic, and 6 percent are Asian. Eighty-three percent of the Macy students are female and 17 percent male. Sixty-one percent are eligible for free or reduced price lunches. Thirty percent of the Macy students' families are on public assistance. Many come from broken homes and poor neighborhoods and are familiar with the common struggles of drugs, crime, and teenage pregnancy. Thirty-seven percent of the Macy students come from single parent families and 72 percent of the Macy students' mothers have less than a high school education, 19 percent graduated from high school, and 4 percent from college.

Student Recruitment and Selection

The Macy program at Barton accepts 100 ninth graders and an additional 50 tenth graders each year. Students from all over New York City apply for the Macy program at Barton High School. Students are required to be on or above grade level in reading and math as measured on standardized achievement tests and to have a grade-point average of 85 percent. However, those selected for the program generally score at the 75th percentile and above on the reading and math tests given in the eighth grade.

Macy students selected the program because they were determined to go to college and felt this program was their best chance to attain that goal. Many seniors believe they have received the academic and counseling support they need to be competitive and successful at the college level.

The Macy Curriculum

Macy students at Barton receive thorough preparation in all academic areas. The Macy curriculum stresses the mastery of abstract concepts and demonstration of effective oral and written communication skills. All Macy students are required to take four years of math, science, social studies, and English. In math, coursework advances to calculus; in science, to physics and anatomy/physiology; and in social studies, to global studies. Three years of a foreign language also are required. Latin may be chosen as the language of study. To prepare students for this rigorous program of study, students are required to participate in a summer orientation program prior to beginning the ninth grade.

The academic program requirements at Barton go well beyond the requirements for a New York City Regents Diploma, the school system's honors curriculum. The for these requirements between the two programs are:

Courses	Regents Credits	Macy Credits
English	8.0	12-14
Social Studies	8.0	8.0
Mathematics	4-6	8-10
Science	4-6	16-20
Foreign Language	6.0	6-10
Art/Music	1.0	1.0
Miscellaneous	5-9	0-8
Health	0.5	0.5
Total	**40.5**	**51.5**

To complete their extra academic requirements, Macy students take an additional period each day.

Upon entering the program, many Macy students exhibit performance deficits in verbal skills. To address this problem, the program's English curriculum emphasizes effective oral and written communication, vocabulary development, and reading comprehension. Each week, Macy students learn 50 vocabulary words. Students read a wide variety of novels, plays, short stories, essays and poems. Literary works are studied in-depth. Students also read independently and every five weeks, they report on a work of their choice.

Ninth- and tenth-grade Macy students at Barton take a two-year course in writing. This program emphasizes analysis, revision and vocabulary expansion skills. The writing program also stresses the development of organizational and higher-order thinking skills.

An upper-level course, "Medical Issues and Ethics," provides students the opportunity to learn speaking and library research skills while gaining insight into important issues confronting the medical professionals. Readings in current publications, such as Scientific American, Discovery, and The New York Times, stimulate students' use of analytical reading and critical thinking skills. Macy juniors and seniors may also participate in a seminar focusing on literary classics such as the Iliad, Plato's Republic and Greek tragedies.

The Macy faculty also is committed to providing students a challenging and enriching social studies curriculum. Macy students take a demanding sequence of Regents courses which includes American history, government and economics, Eastern studies, and global studies. In 1988-89, advanced placement sections in American history and political science were added. Macy students may enroll in humanities courses offered at Long Island University and earn college credits.

The college-preparatory mathematics curriculum developed by Macy faculty addresses the diverse needs of Macy students. Upper level calculus students may enroll in advanced courses at Cooper Union College.

The Macy science curriculum engages students in the study of a broad spectrum of challenging topics. Through the cooperation of Cold Spring Harbor Laboratories, Macy students and faculty participate in highly technical DNA research. The anatomy and physiology course stresses the use of critical thinking and problem-solving skills. Students grapple with college-level content in this course. Advanced placement biology for Macy juniors and the study of modern genetics, bacteriology, and microbiology for Macy seniors offer the students a strong pre-medicine background that will enhance their chances of success in college and graduate study.

Instructional Strategies

Macy teachers employ a variety of instructional strategies to engage and challenge students. Whole class, small group, and individualized instruction allows staff to meet diverse student needs. Considerable effort has been directed at developing questioning techniques that call for the students' use of higher order thinking skills. Macy teachers also are exploring ways to incorporate more opportunities for group problem-solving and cooperative learning into their day-to-day classroom teaching and the extended-day program. Students are encouraged to help one another rather than depending on the teacher for assistance.

Macy teachers vary the pacing of lessons to allow for differences in student learning and the degree of difficulty in lesson content. Class time devoted to instruction exceeds 80 percent. Most Macy classrooms are arranged in a traditional manner with desks aligned in rows facing the front of the room. However, other arrangements are used at times to encourage student discussions.

Macy students seem engaged and well-prepared for class. They appear intellectually stimulated and are frequently challenged to solve the problems the teachers present.

Student Support Services

Through the support of Macy resources, the faculty have developed a comprehensive counseling program. It includes an orientation course in the pre-ninth grade summer called STEPS and a college center that is fully equipped and staffed by Macy counselors. Students believe the counseling program is important in providing the support and guidance they need to succeed in the Macy program.

Macy students appear to seek assistance from their counselors and teachers readily. Macy counselors and

teachers are very active and provide needed and timely support to Macy students.

The counseling office operates an extensive and sophisticated academic and career advisement center. Two counselors, one full time and one part time, serve Macy students. Eleventh- and twelfth-grade students spend a significant amount of time with counselors exploring college pamphlets, visiting colleges, getting ready for and taking required college entrance exams, and gaining information about college entrance requirements and program offerings. The counseling department also distributes information on the college application process, financial aid, admission requirements for various colleges, and issues of college life.

A number of other counseling services are provided to Macy students. Counselors and the Macy project director monitor students' progress. Teachers provide counselors information about students who have academic deficiencies or personal problems. Students who need help are referred to the Macy study program where they can receive assistance to improve study habits, coping, and problem-solving skills. These students also can receive tutorial assistance in their course work from trained Brooklyn College student tutors.

Enrichment Activities

Several academic enrichment and reinforcement activities for Macy program at Barton are provided by colleges and universities. The goals of enrichment activities are to advance student learning, to provide cultural enrichment, and to orient students to college life and science and math careers. Various activities are integrated into the curriculum content areas and offered through extended-day and summer programs.

In science, beyond the course work in anatomy and physiology and microbiology, extensive enrichment courses are provided. Students may attend seminars at the State University of New York (SUNY) Health Sciences Center at Brooklyn and Syracuse Universities. Brooklyn College and Long Island University provide Macy students opportunities to enroll in college level science courses and to participate in research projects. Of note is the success of Macy students in science fair competitions at the city and state levels. Four Barton students won first prizes and six students won additional prizes in 1988-89 competition. Research opportunities also are available to students in biochemistry and neurology at the SUNY Health Sciences Center, the Long Island science research program called the STAR program, and the Columbia University science honors program. Macy students also attend summer programs at Phillips Academy, the Cold Spring Harbor Laboratory, and the New York State Summer Science Academy.

A six-week summer orientation program for incoming students stresses the development and improvement of analytical reasoning, writing, speech, math, and science skills.

The extended-day program for Macy students offers opportunities for peer tutoring, assistance with research projects, and the presentation of seminars. Relevant and timely seminar topics include AIDS treatment and cancer research, medical technology, health care professions, and college life.

Staff Development

Most of the 42 Macy teachers at Barton have between 15 and 20 years experience and have been at the school for most of their careers. The primary vehicle for the instructional improvement is a comprehensive staff development program that addresses student needs. Primary Macy staff development goals are: (1) to enhance student skills; (2) to increase teachers' knowledge base in their own curriculum content areas; and (3) to enhance student thinking skills through effective and innovative pedagogical techniques and complementary curriculum materials (i.e., tests and exercises that foster higher order skill assessment and development).

One innovative instructional strategy used in the program is the St. John's University curriculum of the Great Books. The St. John's model exposes students to literary classics and trains teachers to use questioning techniques that stimulate student discussion and critical thinking skills.

Many of the Macy staff development activities at Barton are standard for teachers in New York Public Schools. An exception, however, is the English department's staff development program. The English department faculty have monthly luncheon meetings to discuss methods of improving student analytical reasoning through writing and the integration of writing across the curriculum. English department staff also work with the Brooklyn College Writing Center to improve student writing and encourage high standards of written expression across the curriculum.

The SUNY Health Science Centers have conducted a series of seminars on current issues in medicine. Macy science faculty attend programs at the Cold Spring Harbor Laboratory and nearby universities to stay abreast of recent developments in research. Macy teachers also participate in activities of professional organizations, such as the National Biology Teachers Association Conference, the New York State Regents Conference on Writing, and the New York Board of Education Critical Thinking Conference.

Student and Teacher Views of the Program

Most Macy students believe that the challenging curriculum is the most beneficial aspect of the Macy program. Students say that being with other highly motivated students significantly influences their work effort and achievement orientation. Students also regard the classroom enrichment activities as contributing to their educational progress.

If there were no Macy program at the school, students feel they would not have as challenging a curriculum and, consequently, would not be as well prepared for college. They also believe they would not have been as able to sustain their high level of motivation. As Macy program participants, students believe they have a good chance of being accepted by competitive colleges, and many have expressed interest in pursuing their studies in health care and medicine.

Teachers cite administrative and collegial support as factors that account for Macy program effectiveness. Small class size and student support services also are credited with providing a learning environment that enables students to stay motivated and be consistently productive. Teachers also believe the extra-curricular experiences of students are critical to fostering high student performance.

Many Macy teachers report using more varied teaching strategies when working with Macy students. They say Macy classes require extra preparation because of the advanced course content and students' level of interest and engagement.

According to Macy teachers, the students benefit from participation in the program in numerous ways. They become more academically self-confident. Their work habits improve and, thus, their academic performance improves.

University Affiliation

Brooklyn College has been an active partner in the development and implementation of the Macy program at Barton High School. The college provides staff development for teachers, course work for advanced students, as well as orientation programs that help prepare students for college life. Through collaboration with Brooklyn College faculty, for example, Macy teachers have incorporated two innovative programs into the curriculum: Writing in the Content Areas and Critical Reading.

Brooklyn College staff and students play an instrumental role in the improvement of students' verbal skills. Brooklyn College Writing Center students tutor Macy students in writing and critical thinking skills. They help students draft and revise class assignments.

Program Leadership

The leadership provided by the principal and Macy director has been significant to the development of the program. Although the Barton program gained strong footing under the leadership of previous administrators, the commitment and hard work of the current administrative staff is evident in the program. In 1988-89, the school principal and program director were invited to make a presentation about the Macy program at the National Biology Teachers Association in Chicago.

Macy teachers and faculty at Brooklyn College and Long Island University also have played significant leadership roles in curriculum development and the sharing of information from professional journals and conferences. English teachers have led faculty workshops on student writing. College and university staff have provided direction in developing and expanding the English and science curriculums.

Issues and Concerns

As one of the first and one of the largest Macy project sites, the Barton program has endured the many push and pull tensions that so often accompany growth. Macy staff and students have identified several areas of concern that merit consideration.

Both students and teachers believe the Macy curriculum could benefit from a careful review. Instructional methods and materials require continuous updating and revision. Macy teachers are presently engaged in such efforts, and this appears to be resulting in renewed enthusiasm among staff and in the classroom.

Another area of concern is the rate of retaining students in the program. Macy staff estimate that about 85 percent of the ninth graders are retained in the program. The overall program retention rate is about 90 percent. Still, there is concern about the number of ninth and tenth graders who find the program too demanding and drop out. In addition, upper level students report intense pressure to maintain the 85 percent grade average required to stay in the program. Currently, counselors devote much of their time to assisting upper level students with the college application and selection process. Ninth and tenth graders, as a result, often do not receive a comparable level of counseling services. The extended-day program partially addresses their needs for academic assistance and counseling with personal problems. Still, there needs to be a more concerted effort to strengthen the support network for Macy students experiencing academic difficulty.

The recruitment of minority teachers is a concern not only in the Macy program at Barton, but other sites as well. One senior reports that she has had only two non-white teachers throughout all twelve years of school. Of the 42

Macy teachers at Barton, 41 are white. This is an important issue which must be addressed on a system-wide level.

Finally, some critics of the Macy program contend the program siphons off the few good and motivated students, leaving other high schools with depleted and more difficult student bodies. Another concern is that the increased resources required to provide an excellent education to Macy students is taking away precious resources that are required by more needy students.

Program Outcomes

The graduation rate for Macy students at Barton is 100 percent and 99 percent of the graduates go on to four-year colleges. In comparison, the graduation rate for the high school is about 90 percent; of these, half of the non-Macy graduates go on to four-year colleges, and half attend two-year postsecondary institutions. Macy 1989 seniors received an average of 3.3 acceptances per student to four-year colleges. They will attend the following schools, rated according to their competitiveness by Barron's Guide to Colleges:

Most Competitive	Very Competitive	Competitive
Barnard	Hofstra	Baruch (4 students)
Berkeley	New York Univ. (3 students)	Binghampton (2 students)
Brown (3 students)	Stonybrook (7 students)	Brooklyn (4 students)
Cornell (3 students)	Williams	CCNY
St. Johns (3 students)		Fordham (4 students)
		Hampton
		Howard
		Hunter (2 students)
		John Jay
		Manhattan
		New Paltz
		Pace
		Spellman (2 students)
		Univ. of Conn.

Because many Macy students come from low-income families, financial assistance for college is essential. Macy graduates at Barton were awarded a total of $223,000 in annual scholarships in 1989. Continued efforts in securing college funding for Macy students are critical to ensuring their future academic success.

Macy students' performance on Advanced Placement (AP) tests provide another gauge of achievement. In 1988-89, the first full year of AP History, nine of 21 students scored "3" and above on a scale of 1 to 5. The Macy AP Political Science class earned statewide honors in the Bicentennial Constitution Contest. On the AP Biology exam, 19 of 24 students achieved a score of "3" or above. Clara Barton is recognized as having the largest number of minority students in schools across the state to pass this exam. Many of these students are Macy participants.

Barton school administrators contend that the entire school has improved as a result of the Macy program, and give as evidence the fact that the numbers of non-Macy graduates going on to four-year colleges has increased from 35 percent to 50 percent during the time the Macy program has been at the school.

Future Directions

Currently, the central school system administration offers considerable support for the Macy program from the central administration. However, the administrative structure of the Macy program and allocations for basic educational services are not a permanent part of the school's budget. Staff are concerned that program services will not be supported fully after 1990. Securing funding for reduced class sizes, the extended-day program, counseling, and administrative services must be a primary goal if the program is to continue to serve as a model for attracting and preparing disadvantaged young people to enter competitive four-year colleges.

DeWitt Clinton High School
Macy Medical Science Honors Program
Bronx, New York

Background

DeWitt Clinton High School is located in the Bronx section of New York City. It is a large high school, serving close to 5,000 students. The school was established in the late 1800's as a comprehensive high school for boys. For much of its history, Clinton was regarded as an excellent New York City high school, but by the early 1970's, it had suffered serious declines in student performance. At the time the Macy Foundation awarded funds for the development of a Medical Honors Program at Clinton, the basic skills achievement test scores of the students were quite low, and 60 percent of entering ninth grade students did not graduate.

In 1983, as a part of the New York City Board of Education's school improvement effort, DeWitt Clinton High School was designated as a health careers high school. The next year, the Board of Education authorized a collaborative venture between Clinton and its neighbor, Lehman College, to support the implementation of the health careers program. In that same year, the Macy Foundation gave a grant to the college to plan the development of an honors program at Clinton geared toward students interested in medical and science careers. The planning for the program was initiated in 1984, with the active participation of the school staff and consultants from the Macy Foundation.

The Macy program at Clinton was implemented in 1985. In June 1989, the Macy program graduated its first class of students. One hundred and fifty Clinton students are admitted to the Macy program each year. The program's objectives are to offer qualified students an intensive four-year academic preparatory program that will enable them to compete for college placement and to obtain undergraduate degrees. Another goal of the program is to improve the academic climate of the entire high school and to regain the school's standing as a model for the city.

Student Characteristics

Approximately 4,200 students attended Clinton during the 1987-88 school year. Fifty-two percent of the students in the school were Hispanic; 45 percent were African American; and approximately three percent were Native American, Asian, or White. In 1988-89, 310 students were Macy participants.

Sixty-two percent of the Macy students at Clinton are female; 38 percent are male. During the 1987-88 school year, 63 percent of the Macy students were eligible for free or reduced price lunches. The Macy students at Clinton can be characterized as coming from economically poor families. Fifty-five percent of the Macy households were headed by a single parent. Sixty-six percent of the mothers of Macy students had less than a high school education.

In June 1988, the program roster included 56 Macy students in the ninth grade, 88 in the tenth grade, 75 in the eleventh grade, and 39 in the twelfth grade. Of the 116 new students entering the program for the 1988-89 school year, 71 were ninth graders and 45 were tenth graders. Comparison of the Clinton student population and the Macy group with regard to gender and ethnicity is as follows:

Characteristics of Students at DeWitt Clinton High School 1987-88 School Year

	Clinton	Macy
Enrollment	4,273	194
Female	44%	62%
Male	56%	38%
African American	50%	50%
Hispanic	49%	40%
Nat. American, Asian, White, Pacific Is.	1%	10%

Source: 1987-88 Annual Report, pp. 2 and 6.

Student Recruitment and Selection

While students from all over the City of New York apply for the Macy Medical Honors Program at DeWitt Clinton High School, most students are from the Bronx. In 1988, there were 2,000 applications for 100 ninth grade and 50 tenth grade spaces in the Macy program. Students must

perform at grade level (50th percentile) or above in reading and math, as measured by the New York State standardized performance tests. Prior academic performance also is considered, with an 80 percent grade-point average in junior high school generally required.

Once in the Macy program, students must maintain an 80 percent average in all subjects. They also must pass all their courses during the calendar year. If their average falls below 80 percent, Macy students are placed on probation, and they must raise their grades to the 80 percent standard by the following year to remain in the program.

Macy students at Clinton appear self-confident and goal-oriented. Most describe themselves as highly-motivated to achieve in school and in a future career. Most students also report that their plans for college were fairly well-established by the time they applied for a space in the Macy program at Clinton. They selected the program at Clinton because it offered an academic preparatory program they believed would help them meet their goal of gaining admission to a "good" college. Students report that parental influence also played a significant role in the students' selection of the Macy program; parents/guardians strongly supported their decision to seek acceptance to the Macy program. Many Clinton students selected the Macy program because they were interested specifically in its emphasis on preparing students for the medical professions. Interestingly, many felt that when they first entered the program they were not prepared for the level of effort and heavy coursework demands placed on them. As a consequence, they experienced considerable adjustment problems their first year in the program.

The Macy Curriculum

As in the other Macy programs in the New York City school system, the program at DeWitt Clinton consists of an advanced Regents-level honors curriculum. The Macy program imposes additional requirements on students including advanced courses in science such as microbiology and research methods. To complete the program's additional course requirements, Macy students are required to take one additional period each day. These additional course requirements include: four years of math to pre-calculus; four years of science through physics and microbiology; four years of social studies; and three years of a foreign language. Students also take two semesters of a SAT preparation course, as well as college-level elective courses at Lehman College. The Macy teachers report that course requirements and achievement expectations for Macy courses are more demanding than for non-Macy honors level courses at Clinton.

A large proportion of Macy students at Clinton enter the program with considerable deficits in verbal language and written communication skills. Students also are weak in reading comprehension. A language development curriculum, which is partially integrated into other subjects, stresses improvement of verbal and written communication skills. In addition, a reading improvement program was implemented during the 1988 school year that requires students to read extensively across content areas and complete reading comprehension skills exercises.

Instructional Strategies

The Macy support system at Clinton fosters a positive, mutually reinforcing interaction between teachers and students. This interaction enables students and teachers to get the best out of each other. Macy teachers are enthusiastic about teaching in the Macy program and teacher morale is high. The teachers cite the abilities of the Macy students, their high levels of motivation, and the quality of their academic performance as important factors influencing their enthusiasm and their willingness to put extra efforts into their teaching. The students, in turn, respond to the teachers' enthusiasm and extra efforts by putting forth more effort themselves.

Overall, the instructional delivery techniques employed by the Clinton teachers could be described as conservative and traditional. Many teachers lecture and follow up with teacher-led discussions; they demonstrate well-developed skills in presenting information, organizing and pacing their teaching, managing classrooms, and engaging the students in discussions of the subject matter. They also demonstrate extensive knowledge of their disciplines and obvious enthusiasm for the subject matter. The lesson formats and instructional strategies are best characterized as highly structured and teacher-dominated.

The overall lesson quality is high and demonstrates evidence of careful planning. Students appear to be prepared for class and engaged in the lesson. Teachers use effective strategies to orient and motivate students at the beginning of each lesson. They rely on student responses to pace the lessons. At the end of the class, teachers effectively summarize the lesson and provide feedback to the students.

Classrooms at Clinton are traditionally arranged, with students seated in rows facing the teacher. Most teachers employ a "whole group" approach in making presentations to the class or in leading class discussions. In the lab settings, the teachers more often use small group instructional techniques. The use of small group, cooperative learning, and individualized instructional strategies are evident in the anatomy and physiology course. Such instructional strategies are prescribed by the course developers and should be incorporated in other courses as well.

Clinton teachers employ effective classroom and time management practices. The amount of time devoted to instruction exceeds 80 percent of the total class period.

There are few disruptions and students effectively use lab time or small group instructional time to complete

assignments. They appear to be challenged intellectually. The quality of the teacher-student interactions and the high frequency of student responses to questions posed by teachers suggests that students feel confident in their ability to respond to questions and to do the work required in the lesson.

Student Support Services

One of the driving forces behind the success of the Macy program at Clinton is the supportive structure the Macy project director and counselor provide on a day-to-day basis. The project director and counselor closely monitor students' academic progress. Close communications regarding student progress are maintained between the Macy project director and the Macy teachers. The teachers, for example, inform the project director whenever a student is having difficulty in a class or is not achieving as expected. The project director and/or the counselor then meets with the student, and a specific plan is made to help the young person. Students also are encouraged to come to the Macy office at any time to discuss problems or to obtain specific help with coursework.

Macy students are the top priority in Clinton's busy Macy office, and the students and staff know it. The Macy office also is a place where Macy students congregate. It plays an important part in building peer relationships among the Macy students, as well as in stimulating a strong group identity with the Macy program. One of the students described the Macy office at Clinton as the place to "hang out."

Macy students strongly believe the school provides them with a support network that will not allow them to fail. Students view the intense, day-to-day monitoring of student progress and the close working relationship between the Macy project director and the classroom teachers as a key attribute of the program. There is a strong perception among students that if someone gets into academic trouble or has personal problems, they can count on a teacher or Macy staff member to help resolve the conflict. Students know the Macy coordinator, counselors, and teachers care about them as individuals; they know the support network is effective.

Significant resources and staff energy are devoted to Clinton's counseling program, especially as students reach the upper grades. Macy counselors assist juniors and seniors in the college application and selection process. Because the search for an appropriate college and financial aid is such a time-consuming effort, however, ninth graders in the program may not receive the support they need to meet the rigorous academic demands.

Enrichment Activities

Academic enrichment activities sponsored by the school are an important part of the Macy program at Clinton. Many students take part in ARISTA, a national honors society for Hispanic students stressing scholarship, leadership, service, and character development. The Macy students also participate in the "Academic Olympics" and physics teams, competing against similar teams within the school and against teams in other schools throughout the city.

Student participation in enrichment activities sponsored by organizations outside of the school has been a central focus of the Clinton program. Several Macy students have participated in the American Medical Association programs at Albert Einstein College of Medicine and at the New York University Medical Center. Students also have attended science and technology enrichment programs at Fordham University, City College of New York and New York University. Macy students also attend "leadership weekends," which are sponsored by the DeWitt Clinton Alumni Association.

Numerous Macy-sponsored enrichment activities and field trips help expose Macy students to college life, career possibilities in medicine and the health fields, and cultural events. This past school year, for example, students traveled to Hayden Planetarium, Manhattan College, the Mount Saint Vincent "Science Days," the Museum of Forensic Medicine, and the State University of New York at Stonybrook. They also attended a Columbia University pre-medical science conference and several theatrical productions.

Macy students at Clinton are quite busy in the summer. Selected Macy students attend the Andover summer enrichment program at Philips Academy, the summer Mathematics and Science Institute, and the DeWitt Clinton Summer Academy.

Staff Development

Staff development for Macy teachers at Clinton most often take the form of department meetings and faculty attendance at conferences and workshops sponsored by other institutions. Although Macy staff members express concerns about in-school staff development programs, their evaluations of the external programs and workshops are more positive. They are especially enthusiastic about the Cold Spring Harbor DNA program for science teachers. Macy teachers and staff view regular department and general program meetings as more appropriate and effective vehicles for planning and implementing changes in the curriculum or for introducing new teaching ideas to Macy faculty.

Staff development programs offered to Macy teachers at Clinton for 1988-89 included workshops on the following topics: (1) reading improvement in the curriculum content areas; (2) the Cold Spring Harbor DNA course at Bronx High School; (3) curriculum and teaching methodology for the anatomy and physiology course; (4) alternative teaching methods, presented by an outside Macy consultant; and (5) methods for teaching the earth sciences, presented by Lehman College faculty.

Student and Teacher Views of the Program

Macy students, especially the juniors and seniors, carry a strong sense of identity with the Macy program. It is a meaningful part of their lives. It influences the level of effort they put into their studies and the high performance expectations they establish for themselves. Their participation in the Macy program has enhanced their self-confidence.

The most beneficial aspects of the Macy program, according to the students, are the more challenging curriculum and the extra-classroom enrichment activities. Students feel the difference in their performance, as compared to other honors students in the school, is a direct result of their parents' and teachers' high expectations and the extensive support services they receive from Macy staff. Besides viewing their teachers as more demanding, Macy students also believe their teachers are more involved and have better relationships with students than do non-Macy teachers.

Most Macy students feel that the preparation they are getting at Clinton will provide them with a good chance of doing well in college. Career interests include medicine, engineering, business, and other professional fields.

Some students feel the stiff requirements of the program, at times, isolates them from the rest of the school. Some of the younger students find the program too demanding and dropout. Most students, however, state that it is important for the program to maintain a high standard of performance. They are concerned that the lowering of standards for some students might cause them to take Macy requirements less seriously.

Students believe they provide an important support network for each other. Part of this support rests on the premise of friendly competition, they claim. Students feel special as a result of being in the Macy program, and they have considerable pride in their own academic accomplishments and those of their classmates. They feel that being with other highly motivated students contributes to their personal success. They highly value opportunities for peer tutoring and encouragement from their classmates. Though students enter the Macy program highly motivated, their efforts to mobilize and organize their resources and talents are supported through their interaction with their peers, teachers and counselors.

Students comment that if there had not been a Macy program at Clinton, they would not have received the amount and quality of academic assistance vital to their success. They also believe their chances of being accepted to their choice of college would not be as great if they had not participated in the Macy program.

Most teachers at Clinton have been teaching for ten years or more and have taught in the Macy program for four years. They strongly believe that participating in the Macy program has affected their teaching. The smaller classes have enabled them to be more involved with their students. They report using different teaching strategies with Macy students and spending more time preparing for class.

According to the teachers, the strongest aspects of the program are the students themselves, particularly their motivation to learn and to "make something of themselves." They describe Macy students as being different from other students they teach. Their work habits, class behavior, and their generally positive relationships with one another and their teachers make Macy students quite special in the eyes of their teachers.

Macy teachers place a high value on the leadership and guidance provided by the Macy Foundation staff and the extensive support system available to students and themselves. They believe the absence of the Macy program would significantly lower faculty morale and student motivation.

University Affiliation

Lehman College provides leadership and support services to the Macy program at Clinton. These services include program guidance, research support, and student orientation to college life. The college also opens enrollment in certain classes to Macy students. The Dean of the Graduate School of Education at Lehman, the Macy counselor, the Macy research director, the Macy program director comprise the governing group for Clinton's program operation and development. In recent years, Lehman College has assumed an increasingly significant role in Clinton's staff development program.

Issues and Concerns

Many Macy students at Clinton enter the program with basic skill weaknesses in English and in writing. Ninth grade students especially seem to have trouble meeting the demands of the Macy courses and become discouraged. These students need additional assistance early in their Macy experience to become sufficiently organized to

handle program demands. They also need considerable remedial and tutorial support. As the Macy program expands at Clinton, investing resources in the orientation and support of first-year students will become increasingly more important.

Student deficiencies in writing and verbal skills also affect performance on college entrance examinations. SAT preparatory classes should focus on the development of vocabulary and language skills and higher order thinking skills. Instruction in SAT preparatory and regular Macy classes should provide opportunities for problem-solving and the application of knowledge and skills across content areas.

Since the Macy program has been in operation at Clinton, the school's overall non-graduation rate has decreased from about 70 percent to a current rate of around 40 percent.

Though the school has made progress over the past five years, there does not appear to be a purposeful strategy using the Macy program as a catalyst for school improvement. Macy counseling and instructional strategies have not been readily adopted by non-Macy school staff. The enrichment program has not been replicated by other school programs. The vitality and excitement that is characteristic of the Macy office, students, and teachers is not evident in the rest of the school.

Program Outcomes

One of the most important gauges of the program's effectiveness is what the Macy students say about their experiences. Those who have participated in the program report that they would have not been able to "reach so high" had it not been for the Macy program. They believe that their chances of being accepted at the colleges of their choice and their chances for success in college have been greatly enhanced by the program.

The first graduating class of Macy students in 1988 was comprised of ten students. All were admitted to four-year colleges and still are in attendance at those institutions. Five of these students received New York State Regents scholarships. Six students received scholarships and financial awards totaling more than $240,000. Macy graduating students in 1989 were awarded $304,580 in scholarships for each of their four years of undergraduate education. Over the four years, this amounts to $1,383,000. The increase in scholarship support is impressive for both the school and Macy students.

In 1989, Clinton graduated its first full Macy class. Ninety-seven percent are going on to four-year colleges. Of the non-Macy 1989 seniors at Clinton who will attend postsecondary institutions after graduation, only 70 percent have indicated they will attend four-year colleges.

The schools selected by Macy seniors and their competitive standing, according to Barron's Guide to Colleges, are:

Most Competitive	Highly Competitive	Very Competitive
Cornell (2 students)	Colgate	Middlebury (3 students)
Dartmouth		New York University (3 students)
Haverford (2 students)		SUNY Buffalo
University of Pennsylvania		SUNY Stonybrook (3 students)

Competitive	Less Competitive
Baruch College	Lincoln
Buffalo State (2 students)	West Virginia State
Colby College	
C.W. Post	
Fordham	
Lehman College	
Mt. St. Vincent	
Norwich	
Pace	
University of Notre Dame	
Utica	

All Macy seniors were enrolled in Lehman College during the spring 1988 semester. Over half earned grades of A, two earned grades of B, and one earned a grade of C.

The mean combined SAT score for seniors taking the test in November 1987 and January 1988 was 919. Mean verbal score was 446; mean math score was 473. All of the students performed well above national norms for African American and Puerto Rican students. Eight of the ten seniors earned combined math and verbal scores averaging 100 points higher than those they earned the previous spring as juniors. Though Macy student performance on the SAT and PSAT has improved significantly in math, there has been no significant increase in verbal scores. This is an area of concern for Macy staff and suggests a need for increased emphasis on verbal skills in curricular and instructional planning.

Macy students' performance on Regents Examination offers additional evidence of the program's effectiveness. The percentages of Macy students taking and passing each of the Regents examinations was significantly highly than non-Macy students enrolled in Regents classes. On six of the seven examinations, the percentage of Macy students scoring 65 percent or above was double that of non-Macy students. Additional comparison data for the Regents Examination is included below:

Regents Performance Median Percent Correct

	Macy Students	Non-Macy Students
Math I	84%	33%
Math II	79	58
Math III	73	61
Earth Science	66	62
Biology	73	62
Physics	71	60
American History	70	58

Future Directions

Five Macy teachers are being trained in new techniques by Lehman professors to improve instruction in history and social studies. Macy teachers in the earth sciences also are engaged in staff development to improve instructional techniques. After training, these faculty members will work with other teachers, teaching them the new strategies.

Staff development is critical to the program's effectiveness. Efforts in all content areas to increase students' verbal and reasoning capacities should be a top priority. Lehman College faculty have facilitated staff and curricular development at Clinton and should continue to play a productive role in improving instruction.

The ingredients that make the Macy program work for students at Clinton are a **caring staff, high expectations, and courses** requiring high performance. What appears to matter the most to students is that their teachers and Macy staff **care about them, have faith in them,** and provide them with **the specific help** they need to be successful. This appears to be an extremely important and relevant strategy for working with today's urban students.

The program at Clinton is not one of words and few deeds. This is a program that, for the most part, gives substance to educational buzz words that too often become a set of educational cliches. "High expectations" at Clinton, for example, mean a specific and rigorous curriculum that includes four years of math, science and English.

"Positive school climate," for example, means students forming a school family where academic excellence is the accepted norm and where classmates support one another in dealing with anti-academic peer pressure from their non-Macy peers.

Parents and the community are very supportive of the Macy program at Clinton and are committed to its future. The area superintendents' office has indicated that the funds provided by the Board of Education for the Macy program would continue at current levels for the foreseeable future. Though staff at the area high school office have no plans to expand the Macy program to other secondary schools, they do view the program as successful.

Hillhouse High School
Pre-Collegiate Enrichment Program
New Haven, Connecticut

Background

Hillhouse High School, one of four public high schools in New Haven, Connecticut, has an enrollment of approximately 1,500 students in grades 9 to 12. The school is composed primarily of African American students and is located within walking distance of the Yale University campus. Hillhouse was once rated as one of the top ten high schools in the country, but was far from this lofty standing when the Macy program was introduced five years ago.

In establishing the Macy program at Hillhouse High School in 1984, school officials hoped to incorporate the Macy goals of academic excellence into a school-wide strategy for academic improvement. The program was an outgrowth of a Yale Child Study Center school improvement effort directed by Dr. James Comer. The Herzog Foundation jointly funds the program to enable the school to develop and implement a quality academic program focusing on health sciences.

The first Macy class began in 1985 and graduated in June 1989. The program admits approximately 40 students each year for a maximum Macy student population of 160 in grades nine through twelve.

The Comer Model at Hillhouse

Although Hillhouse shares many common characteristics with other Macy programs, it is different, especially in its emphasis on overall school improvement and the development of students' social competencies. Hillhouse has worked closely with Yale University to implement the Comer model of school improvement. The model stresses the development of a positive school climate via the organization of a planning team comprised of school, parent, and community interests that works towards school renewal and the strengthening of student support.

The support component is a unique feature of this Comer program. A support network of teachers, parents, and mental health professionals addresses problems that interfere with students' abilities to become involved in their school work. Comer's educational model assumes that if students are able to mobilize their own internal resources, they will achieve more successfully, regardless of any particular instructional strategy or curriculum plan.

The Macy program was incorporated into this overall developmental strategy and has affected implementation of the Comer program in two significant ways. First, the commitment to improving the overall school climate has meant that Macy and non-Macy students are integrated in all classes except for the ninth and tenth grade extra Macy period. Second, the ninth and tenth grade Macy curricula emphasizes general skill development rather than participation in special advanced academic courses designed for Macy students. While improving general academic skills is a part of most Macy programs, Hillhouse's emphasis on this program component is more intense and lasts through the tenth grade.

Student Characteristics

Macy students at Hillhouse share similar background and family characteristics with their non-Macy classmates. Ninety-two percent of Macy students are African American, four percent are Puerto Rican, and three percent are Asian. Sixty-four percent of the Macy students are female and 36 percent are male. One-third of Macy students are eligible for free or reduced price lunch. Thirty-eight percent of Macy students' mothers have completed high school and 15 percent have college degrees. A number of teachers enroll their children in the Macy program at Hillhouse, and this may explain the high percentage of college graduates among the Macy parents. Forty-nine percent of the families of Macy students are headed by a single parent.

Student Recruitment and Selection

Feeder junior high schools are provided extensive information on the Macy program and are encouraged to recommend students who meet performance requirements and have an interest in the health sciences. The general requirement is that students be "on grade level" in their reading and math scores on standardized tests. Final selection of Hillhouse Macy students is based on academic performance, student interest in the program, and recommendations from teachers. There is more flexibility in the range of students accepted in the Macy program at Hillhouse than at most other Macy programs. All Macy students are grouped into the two highest performing clusters in the school. Cluster placement is determined primarily by reading level.

Students select the program because they believe that it is the best way to get into college. Although students express a desire to pursue a more challenging curriculum, some do not have a specific understanding of what the special features of the Macy program are when they enter as ninth graders.

Macy Curriculum

Macy students at Hillhouse are distinguished from their classmates in that they are required to take four years of math, science, social studies, and two years of a foreign language; non-Macy students do not have to complete as rigorous a curriculum. All Macy courses are honors-level courses at Hillhouse.

The Hillhouse curriculum in the ninth and tenth grades includes standard college preparatory courses for Macy and non-Macy students. Macy students, however, have an additional period at the end of the day.

The extra class for Macy ninth-graders is an interdisciplinary course called the Macy Skill Elective. Though it is called an elective, all Macy students must take this course in addition to the required subjects. The course consists of several general academic preparatory units including study skills, library research, scientific methods, decision making, computer skills, and lab science.

The extra period for tenth-graders emphasizes development of positive study habits and attitudes. The course focuses on five areas: exposure to college, introduction to health careers, tutorial guidance, social development, and extra-curricular enrichment. The course sequence initially emphasizes academic support and relationship building and then progresses to college planning and career exposure.

In the eleventh and twelfth grades, Macy students take advanced science courses including Barrow's Anatomy and Physiology and the Cold Spring Harbor microbiology course. Students report the anatomy, physiology and microbiology courses are the most demanding courses in the curriculum. They believe these courses, since they stress self-directed learning and problem solving, are their best preparation for college. The rest of the eleventh and twelfth grade curriculum consists of the standard college preparatory courses offered in the school.

Teachers and curriculum supervisors have been responsible for development of the new courses described above and for expanding some existing courses to make them more challenging for Macy students. Teachers feel this involvement gives them a sense of participation in designing the educational process they are responsible for implementing. As a result of this process, more sections of certain academic courses and more varied advanced courses are part of the Macy program at Hillhouse.

Instructional Strategies

Teachers report that their instructional strategies are "curriculum specific" and that techniques for one course are not necessarily viewed as appropriate for another. In addition, ninth- and tenth-grade classes are more structured than upper level classes. Many teachers employ "whole-class" instructional strategies. Material is often presented in a lecture format and didactic questioning techniques reinforce the lesson. Teachers say, however, that classes with a predominance of Macy students tend to move at a faster pace and cover more material than similar classes comprised mostly of non-Macy students.

Some teachers organize students into small groups for study and research projects. Cooperative learning and individualized instructional strategies are used to promote student and teacher interaction.

Time on task in the classroom exceeds 80 percent. Most classrooms are arranged with desks in rows facing the front of the classroom. Macy teachers use a variety of instructional materials. Pacing of instruction, though not as swift as other accelerated courses, challenges students and allows for individual differences in learning and mastery of material. Students appear prepared and engaged in the classwork.

Student Support Services

A major aspect of all Macy programs is the support program provided for students. Teachers are usually the major support vehicle for Macy students at Hillhouse. Students work with counselors primarily in the eleventh and twelfth grades to prepare for college entrance examinations and to complete college applications. The Macy counseling component at Hillhouse differs from the other programs. The day-to-day support students often need to develop the effort and discipline required for advanced courses is not a function of the counseling office. The Macy director and teachers assume responsibility for this continuous student support and monitoring.

The Macy support system at Hillhouse includes extra-curricular enrichment activities, tutoring, and remedial instruction. Requests for tutoring are initiated by teachers and students. Student volunteers from Yale University and teachers work with students who are having academic difficulty.

Other support activities include field trips to cultural events and guest speakers. Students attend plays and dance performances. Through the Career Speakers program, people in various fields visit Macy classes and talk with students about their work and the academic preparation necessary to prepare for a career in their specialized area.

Student and Teacher Views of the Program

Students report that the aspect of the Macy program most beneficial to their academic progress is extra-curricular activities. They also say the challenging curriculum and working with other highly motivated students are very important contributors to their academic performance. Most students believe they have a good chance of doing well in college as a result of the preparation they receive in the Macy program. Many students are interested in careers in medicine and science.

Students also believe there is a difference in the quality of student-teacher relationships between Macy and non-Macy teachers. Though they don't think Macy teachers are better trained or more capable than other teachers in the school, they do think Macy teachers demonstrate more interest and take more time with students.

Macy teachers believe the support of colleagues is the principal factor that makes the Macy program work at Hillhouse. Teachers are involved in development and implementation of the program. Teachers feel the support of the administration, both in the district from the Superintendent's office and in the local school from the principal's office, is an essential ingredient to the Macy program's success.

The strongest feature of the program, the teachers contend, is the greater challenges and demands it poses for both students and teachers. They believe the social bonding that takes place among students and teachers creates a climate and support framework that promotes individual and group excellence.

Teachers credit the Macy program with the use of different and more diverse classroom teaching strategies. They say the program requires teachers to respond more to the needs of individual students. They also claim that students receive greater and more continuous support from teachers and Macy administrators than do their non-Macy peers. Teachers acknowledge that the positive, reinforcing relationships among themselves and Macy students is directly attributable to the Macy program design.

Teacher believe they expect more from Macy students and spend additional time preparing for Macy courses. Teachers describe the primary difference between Macy students and others is that Macy students are more motivated and better behaved. They seem more responsive to instruction and engage in more continuous productive work.

If the Macy program were discontinued at this point, teachers believe there would be less support for the school's improvement effort. Having the Macy program provides a focus and direction to the improvement efforts at the school that teachers fear would not be sustainable without the program as a driving force.

Issues and Concerns

Students' concerns and suggestions for improving the program are related to curriculum and instruction. Students say, to some extent, they are held back in some of their courses by non-Macy students who are less motivated to work hard. They think that the courses could be strengthened and the instruction more varied.

As did Macy students, Macy teachers identified the curriculum as a primary concern. To meet the needs of accelerated students, the curriculum needs to be strengthened, they claim. They also believe that to provide optimal instruction to Macy students, more planning time should be available to prepare for programs and classes. Teachers question whether or not the administration fully appreciates the amount of time needed for class preparation.

More attention also needs to be given to staff development that stresses teaching strategies and issues of student learning. In the 1987-88 Macy program plan, for example, the only mention of staff development was in reference to the Cold Spring Harbor Microbiology training, which emphasizes a technical/procedural approach, not a pedagogical process.

Another concern about the Hillhouse program is that the entire school operates on the basis of homogenous groupings. In effect, students of similar functional ability are assigned to the same classes. Macy teachers report that the difference in Macy and non-Macy students' preparation and interest in doing school work, at times, impedes the progress of Macy students.

Grouping ninth- and tenth-grade Macy students for an extra period each day is yet another source of concern. Innovative learning strategies presented in the Macy elective class are not necessarily integrated into the regular instructional program at Hillhouse. As a result, students may have difficulty transferring skills and concepts learned in Macy courses to their other classes.

The program staff members are aware of these issues and have begun addressing them. The Buddy Program, for example, coordinates academic and supportive services centered around the diagnosed needs of the incoming Macy student. Macy staff members are considering the development of a more advanced curriculum and building the skill and advisory functions into these classes.

Program Outcomes

Ninety-five percent of the Macy graduates at Hillhouse plan to attend a postsecondary institution. Though exact figures on scholarship awards for Macy students are unavailable, Macy staff suggest the increase from $275,000 in 1988 to $405,000 in 1989 for the whole school is largely due to the Macy program graduating its first class of students. Of the 22 seniors who comprised the top ten

percent of the 1989 graduating class, 16 were Macy students. In addition, Macy students earn a greater proportion of academic honors and achievement awards than do non-Macy students at Hillhouse.

Scores on college entrance examinations are yet another indicator of achievement for Macy students. The combined verbal and math mean score for eleventh-grade Macy students who took the test in spring 1988, was 732; for all non-Macy students taking the test in 1988, the combined verbal and math mean was 658. Three Macy students took the SAT in the fall of 1988 and increased their mean score to 779.

Comparison of ninth-grade Macy students' performance on the Metropolitan Achievement Tests, given in 1988 and 1989, provide additional evidence of student achievement. MAT scores are as follows:

Metropolitan Achievement Test Comparative Performance of Ninth Graders in 1988 and 1989

	Reading	Math	Language Arts
1988 Percentile Ranks	47	48	48
1989 Percentile Ranks	70	61	77

Both the implementation of the Macy program and the Comer model have contributed to the improvement of student performance and of the overall school climate at Hillhouse. These improvements have been acknowledged in the local press and by the community. As a result, there has been an increase in number of academically capable students seeking to attend Hillhouse.

A. Philip Randolph Campus High School Macy Medical Professions Program
Harlem, New York

Background

A. Philip Randolph High School, located in Harlem on the City University of New York campus, was established in 1979 as an experimental education center. In cooperation with the City University of New York, the school was to offer a high quality academic program for qualified inner city students. The original plan for the school called for two collaborating institutions to design the curriculum and staff development training so that a superior academic preparatory program could be implemented at the school.

Inadequate planning and difficulty in implementing the program led to high staff and administrator turnover until 1981, when the current principal began her tenure. She took control of the program and developed a modest, but productive and collaborative arrangement with the City College of New York. This change in leadership resulted in effective program planning and implementation that has placed Randolph high on the priority list of students and parents who are seeking a quality college preparatory program within the New York City school system.

In 1982, the Foundation funded the Randolph program as the first Macy project site. The partnership between the Macy Foundation and the school was a natural one because of their mutual interests. The Macy funds enabled the school to build and offer an advanced academic curriculum for poor and minority students interested in science and mathematics and potential careers in the medical field. In turn, the school offered the Macy Foundation an opportunity to test the potential value of funding demonstration projects designed to create effective college preparatory programs for minority and poor students as a means of increasing the number of minorities choosing careers in the medical and health fields.

An interesting feature of the Macy program at Randolph is that although students who participate in the program have a strong sense of identity as Macy students, the program is not operated as a separate entity with its own faculty, student body, and administrators and simply "housed" at the school. Instead, it is fully integrated into the school's other academic programs as one of several optional academic programs offered at Randolph. In addition, the Macy program is not seen as the primary agent for bringing about change and improvement in the whole school. Rather, it has been viewed from the beginning as one component of an ongoing total school academic improvement effort. Both of these factors, its integration with the other school programs and its ancillary role in bringing about change, have helped to sustain the program over the seven years of its operations.

Student Characteristics

Thirteen hundred sixty students attended Randolph High School in the 1988-89 school year. Seventy-five percent of the students in the school were African American and 23 percent were Hispanic. In 1988-89, the school received Chapter I compensatory education funds because 40 percent of the students were eligible for free or reduced price lunches. Of the 1988-89 entering class, 64 percent of the students were female and 36 percent were male. Ninety-six percent of the entering ninth-grade students at Randolph read at grade level or above, and 68 percent were at grade level or above in math.

Three hundred eighty-eight Randolph students were in the Macy program in 1988-89. Seventy-seven percent of the Macy students in the program were female. Seventy-one percent of the students were African American, and 23 percent Hispanic. Forty-eight percent of the students came from single-parent families. Fifty-five percent of the Macy students' parents have a high school education, and 13 percent have parents who attended college. Approximately 52 percent of the Macy students were eligible for free or reduced price lunches. A comparison of Macy and non-Macy students at Randolph follows:

Characteristics of Students at Randolph High School

	Randolph	Macy
Enrollment	1,368	388
Female	75%	77%
Male	25%	23%
African American	75%	71%
Hispanic	23%	23%
Eligible for free lunch	27%	25%

Student Recruitment and Selection

Randolph is an open-enrollment, city-wide school. Although the New York City Board of Education requires that fifty percent of students admitted to Randolph must be from Harlem and a section of the Bronx, the school accepts students from all over the city for the Macy program and a similar academic preparatory program in engineering. There were 4,000 applicants this past year for the 100 Macy slots in the school. The primary criterion for admission to the Macy program at Randolph is performance at the 50th percentile or above in reading and math. A second criterion is a grade-point average in junior high school of at least 80 percent or above. In the fall 1988, at least 70 percent of all students entering Randolph met these standards.

According to administrators and teachers, the achievement test results and the students' grade-point averages present a somewhat inflated perception of entering students' basic skill levels. In fact, although many of the students entering the Macy program perform better than their non-Macy peers in the New York public schools, they still need remedial help in the basic skills, especially reading and language development. The persistence of the entering reading and language deficits is important to keep in mind because, even after considerable remediation, Macy students often continue to experience difficulty in reading, language and writing skills development.

Once enrolled at Randolph, any student who expresses the desire and has the requisite academic record can enroll in the Macy program if space is available. Students are dropped from the program only if it is determined that they cannot do the work. Students performing poorly in Macy courses are reassigned to less demanding honors courses, but maintained as participants in the Macy program.

Macy students report they selected the Macy program because of strong parental interest in the program and because they view it as the best chance for preparing themselves for college admission. The students are quite serious about this goal and see going to college as their paths to better futures. Most students' academic goals and sense of direction for the future are well-established prior to entering the Macy program. The students in the Macy program at Randolph are highly motivated, goal-oriented, and receive at least moderate support from their families for their academic pursuits.

The Macy Curriculum

The Macy curriculum at Randolph High School is quite rigorous. Students take eight academic classes per day, five days a week. In science, the ninth graders begin with advanced biology and progress over the four-year program to chemistry, physics and microbiology. In math, students start with algebra and advance to geometry, trigonometry, and calculus in their four years at Randolph. Students also are expected to complete four years of English and three years of a foreign language. In addition, they complete four years of social studies, one year of computer skills, and electives in the performing arts. The students also must perform 80 hours of community service.

In addition to coursework requirements, students may take advanced placement courses, summer enrichment courses, SAT preparatory courses, and college level courses on the college campus.

Macy students are focused on and directed toward one goal: to obtain the skills and credentials to satisfy the requirements for admission to the most selective colleges and universities in the United States. The Macy counselors at Randolph employ the selection criteria used by these highly selective colleges and universities to build profiles of successful applicants. The counselors then work with the Macy students to build similar profiles to assure that the students can compete for admission to these institutions. The selection criteria have been interpreted and integrated into the Macy program as the following student performance goals:

- Scores of 500 or above on the SAT verbal portion of the SAT;
- high scores on a minimum of three achievement tests including science, math, and English composition;
- a strong GPA in Regents level courses;
- completion of a full four-year sequence of math, science, English, social studies, and three years of foreign language;
- electives that expand skill capacities (i.e., Creative Writing);
- "well rounded" extra-curricular activities outside of the regular school day (i.e., theater, art, etc.); and
- community service and leadership.

Although this process seems sensible and straightforward, this kind of tailored, intense guidance is the exception rather than the rule in most high schools.

Some Macy teachers criticize the program for being too focused on a very narrow band of the curriculum that does not allow a student much flexibility in the selection of coursework. However, because of the increasing competition for admission to highly selective colleges, many other Macy teachers and students see this focused, rigorous set of course requirements as a distinct advantage.

Randolph High School has two additional honors programs: the Engineering program and the General Honors

program. The Engineering program has entrance requirements similar to those of the Macy program. The difference between the programs is that the Engineering program emphasizes math and the Macy program emphasizes science. The General Honors level academic preparatory program at Randolph differs from the Macy program in that students are required to take only three years of science and math and have no extra-curricular requirements. This permits students to choose more electives. The Honors level courses are described by the teachers at Randolph as not as advanced and rigorous as those taken by Macy students.

Instructional Strategies

Macy teachers at Randolph employ a variety of instructional strategies. Teacher-led presentations and didactic questioning techniques are the predominant instructional strategies. Questions require students to respond at different cognitive levels, from simple recall and comprehension to higher-order thought processes involving analysis, interpretation, evaluation, synthesis, and application in solving problems. Cooperative learning techniques and small-group problem solving activities are used by several Macy instructors. In an advanced math class, for example, students study and take tests in groups. These instructional practices enhance student-to-student interaction and provide numerous opportunities for peer tutoring.

Classroom organization is generally traditional, consisting of rows of chairs facing the front of the class. The management of instruction reflects an effective conservation of learning time. The amount of time devoted to actual instruction exceeds 80 percent of the instruction period.

Macy teachers effectively integrate a variety of instructional materials during the lessons, including handouts, overhead projections, lab equipment, and models. Lesson quality reflects careful planning. Instruction proceeds at a challenging pace.

Students appear well-prepared for class and highly engaged in the tasks presented in the lessons. They use class time productively, interact with teachers frequently, and submit quality work.

Student Support Services

The counseling and guidance staff play a significant role in the school and the Macy program. One of the key goals for the guidance staff at Randolph is helping the students gain admission to competitive four-year colleges. In addition, the counselors also offer students assistance in obtaining needed services from social or family service agencies in the community. The guidance program at Randolph shows little of the close, day-to-day student monitoring and "troubleshooting" by guidance staff that is evident in several of the other Macy programs. The counselors spend considerable time providing students with assistance in scheduling courses, helping them prepare applications for college admission, and assisting students in obtaining financial assistance and scholarships to cover college costs.

Part of the reason the guidance program focuses more on academic than on personal counseling is that the Macy teachers at Randolph play a significant role in both monitoring student progress and providing students with advice regarding personal or developmental problems. The teachers are very much involved with their students' lives both inside and outside of the school, serving as role models and mentors. Many students are quick to identify a teacher to whom they would go for help if they were having academic or personal problems. This is not to say that student attitudes toward the counseling and guidance program are not positive. Most Macy students view the counselors as available to them and as a source of assistance with both academic and personal problems. When "things get tough," students say they seek help from the counselors as often as they seek assistance from their parents or teachers.

Staff Development

Staff development is a crucial part of the instructional improvement strategy in all Macy programs. Staff development at Randolph, however, stresses pedagogical improvement to a greater extent than other Macy programs. This is mostly attributable to the principal, who is concerned about the quality as much as the content of the instruction. In the principal's view, teachers are expected to set and maintain high goals and expectations for their students and are directly accountable for student academic achievement. The principal has developed not only the philosophy that is provided to staff in training sessions, but also the range of instructional strategies that are used to carry out the school's educational philosophy. The principal also has devised requirements for lesson plan development in which the teacher is asked to specify the lesson objectives, instructional strategies, and evaluation methodology.

Staff development emphasizing instructional improvement is viewed as a continuous process at Randolph and includes frequent activities. Staff work in small groups to discuss education issues and work through instructional problems. They use role playing techniques to work through the problems they encounter with the management of instruction or student discipline. Workshops focusing on key curriculum or instructional problems are presented by school colleagues as well as by education consultants. During the past school year, staff development programs stressed the understanding and improvement of instructional strategies to facilitate student learning. Pro-

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grams offered to the Macy teachers have included: "Conceptual Processes at the Cognitive Level," "How and Why Students Learn," and "Reasoning Skills, Critical Issues and Current Practices."

Student and Teacher Views of the Program

In general, students -- whether just entering or finishing the program -- are positive about their Macy experience. The majority of the students feel the most beneficial part of the Macy program is the more challenging curriculum. Students also report that being with other highly motivated students, the extra classroom enrichment provided by the program, and better teachers are additional advantages of being in Macy. According to the students, the primary differences between Macy and non-Macy teachers is the better course preparation exhibited by the Macy teachers. Students also say that they could go to their teachers for guidance and assistance with problems to the same extent as they would relatives and friends.

Students attribute their academic performance and self confidence to their participation in the Macy program. Students believe they will have a good chance of doing well in college, given the preparation they are receiving in the Macy program.

Many students say their high levels of motivation to attend college and their willingness to work hard to get there might not have been sustained were it not for the Macy program, given the other distractions and the strong peer pressures they experience.

Teachers believe the two key factors contributing to the programs' effectiveness are: the quality and enthusiasm of the students, themselves and the level of support and encouragement they receive from other teachers and administrators to examine and improve their teaching. They describe the Macy students as being highly motivated, enthusiastic about learning, and possessing better academic skills than the other students with whom the teachers have worked. As a consequence, the teachers report they are motivated to try out different approaches to teaching and to include more difficult concepts in their teaching to meet the needs and interests of the students. The students, in turn, respond by working harder and stretching themselves to meet the high expectations set by the teachers.

Macy teachers contend their teaching has been positively affected by their involvement in the Macy program. They report using different and more varied strategies in working with students as a result of the staff development they receive, as well as from the experience they gain in working with other Macy teachers and Macy students. They also feel they are better prepared to instruct Macy students effectively and to work more collaboratively with other teachers.

According to the teachers, Macy students, as compared to non-Macy college bound students, on the whole, have a better chance of going to good colleges and doing well in them. Macy teachers view Macy students as having better work habits, higher academic ability, and generally as being better behaved than their non-Macy peers. Interestingly, Macy students at Randolph do not differ significantly on entry-level characteristics from most non-Macy students.

There is strong agreement among teachers about what would happen if the Macy program were discontinued at Randolph. They believe students would be less motivated to work hard and less support would exist for the efforts of the school as a whole to strive for excellence. The teachers state that this, in turn, would lead to a general weakening of their own morale. The recognition and support for the program through special Macy and school system funding is essential, according to both teachers and students.

Macy teachers believe that the Macy program has upgraded the academic climate of the school and helped to develop its reputation as a quality academic preparatory school. The accomplishments of the Macy students in winning national awards and being successful at gaining admission to highly competitive colleges also has raised the reputation of the school city-wide, the teachers claim.

Program Leadership

Program leadership appears to be the key to this program's success. The principal has incorporated the Macy program into the overall school development program. She has developed the program, laid out the specifications for the curriculum, retrained or reoriented existing teachers, and hired new ones. Most importantly, she shares a vision of what the school could be and what students could accomplish given the right kind of environment and academic program. At Randolph, the principal is the Macy director. Because of the central leadership of the principal, the Randolph Macy program has had an impact on the academic quality of the entire school.

The ability of the principal not only to administer the educational improvement process but also to provide the substantive curricular and instructional leadership is an extremely powerful and effective tool in building a program of academic excellence. Randolph's principal is truly an instructional leader. She figures out how things can get done to meet her goal of developing educational excellence in an inner city public high school. She is the only minority principal in all of the Macy urban schools and also the only one who has a racially integrated staff. Both teachers and students respond positively to the requirement and expectation of excellence set by the principal.

According to the principal, the school climate of educational excellence is set by the day-to-day demonstration of excellence by the professional educators in the school.

Students respond to the standards of excellence the teaching adults require of themselves.

Leadership and vision are essential to the success of achieving excellence in both teaching and learning. The leadership provided by the principal at Randolph though not unique, is quite rare, particularly in American high schools. The school principal plays a key role in sustaining the Macy program and generalizing it to achieve excellence for all students in the school.

Issues and Concerns

According to the students, the parts of the Macy program needing improvement are mostly in the area of extra-curricular activities. One criticism of the program is the lack of opportunities for practicum courses in medical settings. Students feel such courses could provide them with more concrete and meaningful exposure to the applied aspects of the courses they are taking. For example, they would like to have the experience of working in a biological laboratory as a way of applying what they have learned in the Randolph biology sequence.

According to Macy teachers, the program could be improved by providing more opportunities for staff to become involved in program development. Some teachers feel they are not as involved in program development as they previously had been. Teachers initially were quite involved in the development of the advanced curriculum, especially in the development of auxiliary courses designed to help students who were having difficulty with the regular curriculum. Teachers note they do not get together as much as in the past to work on improving the curriculum and instructional program.

Some teachers also think the Macy students are not performing as well as they should be in courses outside math and science. A math teacher says the introduction of sequential math has caused her students to be less prepared in basic skill areas required for pre-calculus and other advanced math courses. Some English teachers note that the major problems students experience in reading and vocabulary require further development in these areas. Randolph, however, has made significant progress in improving students' verbal skills. Also, some social studies and history teachers express concern that students are not as prepared or motivated in their courses, and consequently, they do not do as well in these courses as in science or math. These teachers believe this may be a reflection of the lower priority these courses have within the program.

Another area of concern at Randolph is the percentage of Macy students who drop out of the program. Given the philosophy of the program, no one actually is dropped from the program. Students who are incapable of meeting the full demand of Macy honors courses are scheduled into less demanding honors level courses.

The best information available on the issue of Macy dropouts at Randolph is the difference between the students entering the program in ninth grade and the number in the class graduating. This yields a dropout rate for Randolph of about 24%.

Macy program dropouts almost always regret not staying in the program. They see their levels of preparation and accomplishment as diminished in comparison to Macy students who complete the program.

According to Randolph administrators, one reason for the high number of students who drop out of the Macy program is that they are not prepared for the program due to the change in entrance requirements imposed by the Board of Education to assure greater equity of access to the program. The requirements to admit 50 percent of the students from the school's neighborhood and to consider grades and test scores without being able to interview the students to determine readiness places many students at risk of failing to meet rigorous program requirements. Administrators and counselors also say the use of outdated norms on standardized tests artificially inflates students' performance scores.

The issue of excellence versus equity in public schools and how this affects a program such as Macy needs to be addressed directly by the program staff as well as the school system. It also may be the case that the support program required for under-prepared students is inadequate to deal with the students' needs for personal and academic guidance and intensive remediation.

Program Outcomes

The steady increases in student performance are associated with specific program interventions strategies designed to improve areas of weak student performance, such as vocabulary, critical thinking and problem-solving skills. Six instructional strategies address these problems, and have been instrumental in improving student performance on standardized tests:

- improvement of vocabulary throughout the curriculum (students are required to learn 50 new words a week in all courses);
- "Word Play" (a course in vocabulary and language development that is subject matter specific);
- "Language of Argument" (a course that specifically teaches reasoning and thinking skills and strategies);
- SAT diagnostic and preparatory courses in both English and math;
- the CAMPSTAR program, (a concentrated, four-week skill development program operating in summer that covers all the above areas); and

- extensive writing instruction and practice throughout all Macy courses.

The Macy program at Randolph has made great strides in increasing student SAT scores.

Macy SAT Scores 1985-1988

	1985	1986	1987	1988
Verbal	416	433	444	451
Math	507	N/A	509	517
Total	923	N/A	953	968

Although the program has a way to go in its goal of achieving an average Verbal score of 500 and a math score of 550, the average gains each year in SAT scores have improved steadily and are the highest for all Macy programs.

Macy students compare favorably with the total school population on the Regents Examinations. Percentages for the school population and Macy students compiled in June 1989 are presented below:

Regents Results

Examination	School Percentage	Macy Percentage
Sequential Math 1	76%	85%
Sequential Math 2	95%	100%
Sequential Math 3	92%	100%
Biology	69%	78%
Physics	60%	84%

Source: Annual Report, 1988-89, Table 14.

All of the Macy 1989 graduating seniors have been accepted to four-year colleges. Approximately 62 percent of the non-Macy seniors go on to attend four-year colleges. This is the first year that Macy students have been accepted to Princeton and Yale Universities. Randolph Macy students have been accepted to "first tier" universities at a higher rate than any other Macy program. Randolph's 1989 Macy graduates plan to attend the following colleges, listed according to the Barron's Guide to Colleges' criteria for competitiveness:

Most Competitive	Very Competitive
Columbia University	Alfred University
Cornell University	Boston University
Johns Hopkins University	John Jay College
Oberlin	N.Y. Institute of Technology
Princeton	New York University
University of Pennsylvania	Pomona College
Wesleyan University	SUNY Albany
Yale	SUNY Buffalo
	SUNY Stonybrook
	Syracuse University
	Tufts University
	Williams College

Competitive	Less Competitive
Albany University	Norfolk University
Binghampton	
Canton College	
City College of New York	
Embry College	
Fordham University	
Howard University	
Hunter College	
La Guardia College	
Lake Forest University	
Manhattan City College	
Morehouse College	
Morris Brown College	
Old Westbury College	
Oswego University	
Platsburgh College	
Spellman College	
University of Maryland	
University of North Carolina	
University of Rochester	
University of Southern California	
University of Texas	
Utica College	
Virginia Union	
Virginia State	
Zurich State University	

Thirty-nine percent of the 1989 graduating Macy students anticipate majoring in science and medicine. Eighteen percent of the students have expressed an interest in law and business, 33 percent in arts and humanities, and one percent in math and engineering.

A problem all Macy students face is obtaining the resources to attend the college of their choice. The cost of many of these colleges ranges from $15,000 to $20,000 per year. Many of the Macy students' families (44 percent) receive some form of public assistance, and 20 percent are on welfare. Financial assistance is critical for these families.

In 1989, 70 Macy graduating seniors at Randolph won 80 private scholarships valued at over $1 million.

Future Directions

According to administrators, the college preparatory program initiated by the Macy Foundation will continue upon termination of the foundation's support. According to the teachers, the program is so integral to the school that the entire character and function of the school would have to change in order to dismantle the program. Staff, administrators, parents and students share a vitality and commitment to the program that will assure its continuation. Support for the program is also evident from the Area High School Superintendent. This program is viewed as very successful and important. There is some assurance that funding for it will continue for a considerable period of time.

Currently, the Macy Foundation pays only a small portion of the costs of the program. The school system pays for all operating costs associated with smaller class size, as well as for administering the program. Foundation resources are used primarily for enrichment and reinforcing activities, staff development and materials and supplies. The 1988-89 foundation budget for the Macy program at Randolph High School consists of $33,611 for student services, $25,000 for summer programs, $30,500 for staff and curriculum development, and $4,800 for administrative expenses.

Tuba City High School
Macy Bioprep Program
Tuba City, Arizona

Background

Tuba City High School is located on the Navajo Reservation, 90 miles from Flagstaff, Arizona. As the largest high school for Native Americans in the United States, Tuba City High School enrolls approximately 1,300 students. Over 80 percent of the students are Navajo; the remainder are Hopi, Sioux, Creek, Hispanic, and White. These young people come from all parts of the Reservation. Some live in dormitories at the high school; some commute long distances from small, outlying villages on the Reservation; others reside with their parents or extended families in Tuba City. The high school operates both a day and residential program.

The Macy Bioprep program at Tuba City High School began in 1985. The first class of Macy students graduated in June, 1989. When the program was initiated, the high school had a reputation for providing marginal academic preparation for college-bound students. Approximately 12 percent of the graduating seniors performed at grade level; only 25 students of the graduating class elected to attend college. Many parents whose children were college bound were concerned about the academic preparation at Tuba City High and chose other secondary school alternatives.

Primary objectives of the Macy Program were to upgrade the academic preparatory program, increase students' competitiveness for admission to college, and attract more academically talented students. School staff believed that efforts to improve the curriculum could have a positive impact on the quality of instruction for all students attending Tuba City High School.

Student Characteristics

As of September, 1988, 163 students, grades nine through twelve, were enrolled in the Macy Bioprep program at Tuba City High School. Ninety-five percent of the Macy students were Native American, two percent Hispanic, and three percent White. Sixty-nine percent were female, and 31 percent male. Twenty-one percent of the Macy students were eligible for free or reduced-price lunch, an indicator of low family socio-economic status. Thirty-seven percent of the Macy parents had graduated from high school, and 10 percent from college. Twenty-six percent of the students came from families headed by a single parent. Though all students speak English, school officials estimate that about 50 percent are bilingual and come from homes where Navajo is the dominant language spoken.

Student Recruitment and Selection

Recruitment and selection efforts have been refined and intensified since the program began in 1985. Because of the school's historical academic reputation and the political and social friction which exists in the community and at the high school, the recruitment of academically talented students has been a challenge for Macy staff. However, the academic performance of current Macy students and college acceptance rates for graduating Macy seniors have bolstered the school's reputation. The number of student applications for the fall 1989 semester was better than expected. Macy staff have actively pursued promising junior high students. In addition, Macy parents are seeking admission of younger siblings.

The selection process and criteria have changed dramatically over the past four years. Initially, in an effort to recruit a large first class, Macy staff lowered admissions standards. Students were lured to apply by the promise of field trips and special activities. As a result, many of the students who entered the program as ninth graders in 1985 were not performing at grade level and were not prepared for the advanced coursework.

Selection criteria have become more stringent in the past few years. Students currently entering the Macy program must achieve at the eighth grade level in reading, math, and English on standardized performance tests. Junior high school teacher recommendations play a significant part in admissions, too. The students' readiness and desire to participate, as well as the parents' support and willingness to become involved, are also critical factors in the selection process.

The Macy Curriculum

Patterned after the Alabama Bioprep Program, the Tuba City High School program is academically rigorous and challenging. Students are required to take five courses in math, including pre-calculus; four courses in laboratory science, including physics, microbiology, and anatomy and physiology; two years of foreign language, including a choice among Spanish, French, and Navajo; and four years of English. Students also are expected to participate

in summer enrichment activities. These requirements exceed those for non-Macy students, who must complete only two years of math, two years of a lab science, two years of English, but have no foreign language requirement.

Macy staff have invested considerable resources and effort in developing and expanding a curriculum that encourages coordination across content areas and the use of different instructional techniques. For example, in biological chemistry, a course developed on-site with the assistance of Northern Arizona University faculty, students apply principles of chemistry to the college-level study of biology. They learn advanced instrument analysis and laboratory journal recording methods. Seniors in the anatomy and physiology course employ group problem-solving skills to diagnose maladies of the human body as they are presented in patient case studies.

The eleventh grade American Studies course also crosses traditional academic disciplines. Students read selections from American literature that are appropriate and relevant to the period of American history being studied. Special emphasis is placed on the study of Native Americans, their culture and history.

In their effort to develop the Macy curriculum and introduce new courses, teachers and Macy administration had to overcome a number of obstacles. Laboratory facilities for the first few years were inadequate. Advanced science courses were taught in trailers where securing even the basic necessities, such as a constant water supply and electrical current, was a problem. Today, because of the determination of Macy staff to upgrade curriculum and facilities, Macy students learn in modern, attractive, and well-equipped science labs.

Another problem Macy teachers have had to address is the need for extensive remediation in language and writing. Many students who enter the program lack basic reading, writing, and speaking skills. Efforts to upgrade the English curriculum have concentrated on expanding and integrating vocabulary development across subjects. The Touchstones Project focuses on the development of critical thinking and speaking skills. Macy teachers and staff continue to examine ways to improve the English curriculum and increase the skill levels of students.

Instructional Strategies

Macy teachers are deeply committed to improving the instructional quality of the Macy Program at Tuba City. They know what their students need to excel, and they have devoted a great deal of time and effort to developing a wide range of instructional strategies that engage students, enhance learning, and result in higher levels of student achievement.

Subject matter and learning objectives determine how students are organized. In science classes, students often work in small groups on projects or lab activities. In some classes, teachers use whole group instructional methods and didactic questioning techniques. According to Macy students, Macy teachers encourage discussion more often than non-Macy teachers.

The time devoted to academic tasks in Macy classes exceeds 80 percent of the instructional period. Lessons proceed at a challenging pace and end with a review and feedback directed to individual students. For the most part, students come to class prepared and use class time productively.

Seating arrangements for Macy classes vary. In many classrooms, desks are aligned in rows to face the front of the room. In other classrooms, they are arranged for small group work. Some classrooms are divided into a lab or computer work area and a general purpose area.

Macy teachers are aware of the program's strengths and weaknesses. Of particular concern is instruction in English. Though there have been increased efforts to emphasize reading comprehension, vocabulary development, and writing across the curriculum, Macy staff are considering other strategies as well.

Macy teachers keep up-to-date with advancements in their own professional fields. They have visited other Macy program sites to observe classes and discuss curriculum and instructional strategies with their Macy colleagues. At all levels, Macy teachers at Tuba City are very much involved in the development and improvement of the instructional program.

Student Support Services

The academic and personal needs of Macy students at Tuba City require several levels of support services. A portion of Macy Foundation funding provides for a guidance counselor who works exclusively with Macy students. The Tuba City guidance counselor has been involved with the program for three years and is familiar with the students' performance at school and their home situations. Teachers, too, play a significant role in the support system. Students comment that their Macy teachers are "more like friends than teachers."

Many Macy students require day-to-day encouragement and continual monitoring to meet the demands of the rigorous instructional program. The Extended Day Program at Tuba City has supported the instructional program by providing before and after school sessions to improve students' language proficiency and test-taking skills. Saturday workshops have provided forums for students to explore a variety of topics, including feminine roles in today's society.

A number of Macy students live with extended families and need the additional support of a caring adult. Still

others have difficulty bridging the cultural gap brought about by differences in customs, language, and values they have learned at home and those they encounter at school. The guidance staff has conducted individual and group counseling sessions to develop and strengthen student's self-confidence, motivation, and interpersonal skills.

All Macy students require considerable guidance in the college application and selection process and in applying for financial aid. This support function alone requires tremendous commitment of time and resources. Because the needs of Macy students are so extensive and diverse, the support system has been strained. Some parents and students feel the guidance office has not been responsive to their requests for assistance. Macy staff regularly schedule parent meetings to share information about program requirements, enrichment activities, standardized test scores, and college/financial aid applications.

In addition, the guidance counselor believes that ninth and tenth graders have been neglected because of the heavy demand for college counseling among juniors and seniors. As the program expands and the number of Macy students going on to college increases, better planning efforts and possibly, additional resources, will be necessary to sufficiently address students' needs for counseling.

Enrichment Activities

Macy Foundation support has enabled the Macy staff at Tuba City to offer a variety of enrichment activities and extend learning opportunities for Macy students to different settings. Field trips to Washington, D.C. and southern California have expanded students' horizons and given them a chance to directly apply what they have learned in Macy classes. For example, students traveling to California visited the University of Southern California School of Medicine and attended Physics Day at Magic Mountain. Macy students also have traveled to Tucson and Phoenix to tour Kitt Peak Observatory, the University of Arizona Medical School, and the Museum of Science and Technology.

Macy staff members are especially instrumental in arranging summer enrichment opportunities for students. Macy students have attended summer sessions at universities and preparatory schools across the country. Some have participated in the Summer Macy Camp at the University of Alabama. Others have attended sessions at Northfield Mt. Herman, Phillips Academy, and the Massachusetts Institute of Technology.

Locally, Macy students attend the Tuba City Bioprep Summer Program, a four week orientation session that eases students' transition from junior high school to the ninth grade Macy program. During the orientation, students work on improving analytical reasoning, critical thinking, and problem solving skills. They also learn computer word processing and discuss current events and issues.

These enrichment opportunities not only enhance students' academic preparation and broaden their perspectives, but also provide a chance to form lasting friendships with other achievement-oriented young people. Most importantly, they offer positive learning experiences which are instrumental in fostering the student's independence, confidence, and self-esteem.

Staff Development

Macy teachers, guidance, and the program administrator have participated in a variety of staff development activities. Their participation enhances not only classroom instruction and student performance but also their own professional and personal growth. Macy teachers have attended the National Science Teachers' Association meetings, the American Association of Physics Teachers' Conference, a conference on gifted and talented education, and a series of Cold Spring Harbor Laboratory workshops. In addition, teachers and staff have participated in Foundation-sponsored conferences. Teachers and staff have learned innovative yet practical teaching strategies and incorporated these techniques into their Macy courses.

Student and Teacher Views of the Program

Most Macy students at Tuba City say that the most beneficial aspects of the program are the more challenging curriculum and being with other highly motivated and students. They report that being with other students who are academically oriented makes them want to work harder and counters the negative peer pressure they often feel from non-Macy students.

Macy students believe that they will do well in college because of their preparation. They note that they cover material in Macy classes that is not presented in non-Macy classes. If they had not been in Macy classes, they feel they would not have had as rigorous courses nor would they have developed the discipline required to study and succeed academically. In addition, they see their Macy teachers as being more skilled than their non-Macy teachers. Macy students say Macy teachers make sure everyone understands the material before they continue with the lesson.

The Macy teachers, in turn, say that the curriculum and the students' motivation are the program's strongest features. They see the program as incorporating state-of-the-art instructional techniques into a challenging curriculum. According to the Macy teachers, the effectiveness of the program is the result of their collaboration and hard work and the support and efforts of the Macy program administrator.

Macy teachers perceive their students as becoming more self-confident about their academic abilities as they master the curriculum. They believe their students' work habits and academic achievement have improved as a result of being in the Macy program; they also believe that these young people will have increased opportunities for a good college education as a result of the education they have received at Tuba City High School.

According to the Macy teachers, the program is vital to improving the overall educational program at Tuba City High School. If the program were discontinued, Macy teachers would be left without the curriculum and support they now receive. Terminating the program would have profound effects on the students' motivation and performance, according to the teachers.

Issues and Concerns

Teachers and students identified several areas of concern about the program. Both groups felt that the counseling office and staff need to become more responsive to student and parent requests for assistance. Students also cited the need for additional lab space, and teachers called for more support from the school administration and Northern Arizona University staff. Macy teachers also recognize the need to improve English instruction and to help students develop learning strategies and critical thinking skills to enhance their performance on standardized tests.

Program Outcomes

For students, participation in the Macy program at Tuba City has resulted in improved academic performance and increased self-confidence. Because of the rigorous academic curriculum and stimulating enrichment activities, they believe they are more motivated and better prepared to succeed in college. In their Macy classes, they have covered more material and have studied subjects in more depth than their peers in non-Macy classes. They have benefited from being with other academically-oriented students who share similar educational plans and goals.

Overall, Macy student scores for the PSAT, SAT, and ACT have risen steadily in the past two years, especially in math. For example, average PSAT math scores jumped from 30.7 in 1986 to 37.5 in 1987. Average verbal scores for the same test periods dipped slightly from 30.7 to 29.4. However, average SAT combined math and verbal scores increased from 767 in January, 1988 to 805 in November, 1988. Gains were made in both verbal and math scores. Average ACT composite scores rose from 16.0 for 1987-88 to 18.6 for 1988-89. The Macy student population improved scores in all subtest areas; in math, average subtest scores for the same period increased from 16.7 to 20.4.

Macy students outperformed their non-Macy peers at Tuba City on the Stanford Achievement Test administered in 1986-87 and on the ACT for 1987-88 and 1988-89. On the Stanford instrument, the total math mean score for Macy students was 724.1 compared to 684.2 for non-Macy students. On the ACT in 1987-88, the composite score for Macy students was 16.0 compared to 13.0 for non-Macy students; in 1988-89, the ACT composite score for Macy students was 18.6 compared to 13.2 for non-Macy students.

Of the 42 graduating Macy seniors in 1988-89, 30 planned to attend four-year colleges. Nine of the top ten Tuba City High School graduating seniors were Macy participants. Several Macy graduates received scholarship awards in excess of $7,000. One student earned a $10,000 NASA scholarship.

Members of the 1989 graduating class have expressed interest in pursuing careers in medicine, psychology, education, social work, and engineering.

The Macy program appears to have had a positive impact on the general academic program offered at Tuba City High School. The number of academic courses has increased significantly over the past few years. Additional sections of advanced and honors science and math classes are being offered. These increases represent a growing awareness among many non-Macy students of the importance of being academically prepared for college-level work. Teachers and administrators credit the Macy program for this change.

Future Directions

Even though recruitment efforts have been hindered by political conflict on the Reservation and at the high school, the Macy program continues to attract more and more qualified students each year. Macy staff members are committed to ensuring that program components become an integral part of Tuba City High School and, thereby, improve the quality of education for all students.

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All students' and teachers' names used in the case studies are fictitious.
Parental permission was obtained for each of the students profiled in the case studies.

Case Study #1: Billy Parmley

Student Profile :

Billy Parmley is a friendly, sports-minded 9th grader who entered the Macy Bioprep program at a large high school on the Reservation in fall, 1988. His shy grin, boyish mannerisms, and the baseball cap that sits off center on top of his tossled sandy blonde curls are clues that this kid just does not have much time for anything but his buddies, the playing field, and, fortunately, his school books.

Academically, Billy is holding his own in the Macy Bioprep program. For the first semester, he earned B's in Macy English and math/physics and a C in introduction to physics. In addition to the Bioprep core, Billy is taking algebra I, physical education, and one elective each semester. His 3.50 GPA for the first semester put him in the top 5 per cent of his class. His transcript shows only two absences. Yet, according to Billy and his physics teacher, he could be doing better if he would study more and work a little harder.

Too often, says the instructor, Billy tries to take the easy way out. His performance is erratic—"sometimes good grades and other times rotten," according to his teacher. "He just doesn't do the extra credit or come in after school to make up work if he's missed a lab. He'll try to get it done during class. He doesn't like to put in the extra time yet," notes the Bioprep teacher.

Still, the instructor says Billy gets along well with everybody. He is personable and popular and probably more verbal than most boys in the ninth grade. And while he likes to joke around in class and every once in while go out on a limb, he will not go so far as to risk falling out of the tree by pushing an issue among his peers.

Outside of the classroom, Billy seems to take on a more pivotal role among his peers and family. He played backfield during football season, and, until an injured knee benched him, was member of the basketball team. If he is not playing a school sport, he is either playing ball with his friends or helping around the house with chores and taking care of his younger brother and sister.

Billy, who turns 16 next fall, lives with both parents, two brothers and two sisters. His father, who attended some college, works graveyard as a pipefitter; and his mother, a high school graduate, makes jewelry and other Navajo crafts to sell to tourists. Both speak Navajo as a first language and both grew up on the Reservation.

Program Entry:

Unlike most students who enter Macy programs because they are looking beyond to college and careers in medicine, Billy says he applied, upon the recommendation of his junior high school counselor, because he thought it would give him a better chance of being accepted as a sophomore at a boarding school for Native Americans in the Northeast. According to Mrs. Parmley, Billy's older brother and sister were part of the program when it first started at the high school but have dropped out so both Billy and his mother knew about the program before he entered.

While Billy saw the program as a way to get to a boarding school back east, Mrs. Parley saw his involvement in a different light. "I wanted him to get prepared for college ... I think Macy would make him work harder and really stick to school instead of fooling around out there."

Assimilation:

The beginning of the year was especially tough for Billy though. He had not attended the summer orientation program so he didn't know what to expect, nor did he have the opportunity to develop and sharpen essential study skills. "...I had math and physics courses and I didn't know what was going on because I really didn't know how to write notes ... Some students took the summer program and they really had an idea [of what to expect] ... I didn't know that much and I thought it was going to be easy. I didn't have any friends ... no one to talk to," he explains.

Besides having to develop new skills and friendships, Billy also had to redefine his priorities and relationships with his old friends. "...You know the group I hang around with, they're kind of wild, and I thought I'd just goof around. Sometimes they cut classes and I thought I'd be with them but I'm not. School's different from what I thought of it at the beginning of the year. I thought I was just here to have fun but I guess I'm not..."

As a first year participant, Billy has yet to formulate a clear picture of what the Macy program is all about. He does not really see any differences between Macy and regular teachers, but he knows he can not mess around in Macy classes like he might in others. More homework and having to work harder have become the norm for Billy. He identifies Touchstones, field trips (such as the one to Magic Mountain in California), and summer enrichment activities as part of the Bioprep experience, but he does not yet have a strong identity as a Macy student. It seems he has one foot in the Macy program and one out still kicking to be part of male adolescent Navajo experience.

Retention:

So far, Billy has kept his balance. Even though his friends come by the house daily after school and ask him to go play basketball or other sports, Billy does not join them until he's finished his homework and chores. Often they wait outside the window until he is finished. Billy sees his giving up time with his friends as a tradeoff for being in Macy since he still identifies more with them than with the Macy program students.

This summer, Billy plans to attend the Cold Spring Harbor program in New York and then fly south to the University of Alabama Summer Bioprep camp. As Billy gets more involved with the program, participates in the summer enrichment activities, and is challenged by the tough upper level courses, it is most likely his identification with the Bioprep program will become stronger. Even though the program will become academically more demanding and require even more of Billy's time, there's a good chance that he will stay in the program. One thing that seems to excite Billy is hard work and a personal challenge. In fact, if he could relive one experience since entering the program, he said it would be the beginning of the year because it was harder.

This inner drive is part of what makes Billy tick and keeps him on track. "Just do it," he says. Macy makes him work harder; it pushes him. But digging a little deeper, it is not what Billy wants to do at this point that seems important: it is what he does not want to do. "I just don't want to quit ... I want to finish it ... I just do not want to mess up, that is all," he says.

Initially, Billy said he is keeping up so he can play sports and go to college. But he, his mother, and his teacher also mentioned that family problems are having a negative impact on his participation in the program. Billy, however, does know that his mother wants him to make it all the way through the Macy program.

According to Billy's mother, a key to his motivation for staying in the program and keeping up his grades are his past experiences in school. She mentioned his getting behind in sixth grade because he fooled around and waited until the last minute to do his homework. Also, wanting to bring honor to his family and his name seem to drive Billy, and his mother reinforces his commitment. "We put school first," she says. On a more concrete level, Billy's mother has promised him a motorcycle if he gets straight A's.

At this point, both Billy and his mother feel good about his participation this year. And while he did not offer any suggestions for changing the Macy program at the high school, he, his mother, and teachers realize the program can change his future.

Impact:

Billy's teachers believe that the Macy program has helped him academically more than the regular program would have. Macy students, they contend, verbalize more and have more opportunity to increase skills, build knowledge, synthesize, and integrate what they have learned. "As a general rule," explains the instructor, "this is a real easy school. You don't have to do much to survive. [The students] learn that they don't have to work and they can pass." If Billy were not in the Bioprep program, he probably would be earning higher grades in less academically-demanding courses.

For Billy, being in the Macy program has effected his social life negatively. While he has not been able to spend as much time with his buddies who are in the regular program, he has made new friends in his Macy classes. And interestingly enough, Billy has become a knowledgeable source of information and perhaps even a role model for his non-Macy friends who ask him questions about scientific phenomena, such as why they don't hear the crack of a ball against the bat until a second or two after the ball has been hit.

Billy's participation in the Macy program also has affected the Parmley's family life. Billy, it seems, has become the child who has the chance to make it. Though his father may talk about the extra money needed for the Macy field trips, his mother has seen the youngest daughter become more directed and grade-conscious since Billy has been in the program. "I'm going to be smarter than you," she tells Billy, "I'm going to be in that program ... and make straight A's."

As a ninth grader, Billy is not sure about what he wants to do with his future. He knows he wants to go to college, even dreams about being the first Navajo on a college football team; but beyond college, his future is still a mystery ... NFL football, an engineer, a lawyer? What is clear, according to his mother, is that he wants to come back to the Reservation to help his people and his family.

For now, however, he thinks he might just stay in Tuba City rather than transferring to a boarding school back east. "I'm learning a lot," he says. "I get a lot of homework, and it keeps me busy."

Analysis:

Billy Parmley exemplifies the conflict many males face during the first year of the Macy program. One of the critical issues for Billy, as other boys, is assimilation. To what extent must he separate from his old friends? To what extent does he identify with the Macy program? To what extent has he bonded with other Macy students, teachers,

and staff? And what are the support structures in place that will help him as he accumulates positive experiences which can provide him with a feeling of connectedness, direction, and a clearer sense of himself as a Macy student?

Assimilation, in this study, is defined as the degree to which a student feels a part of the whole, the extent to which a student has been absorbed into the Macy mindset and experience. Factors which appear to promote assimilation are:

1. The student perceives the program can help him accomplish future goals;
2. The student knows what to expect in terms of classroom experience and work load;
3. The student feels part of the Macy student group and has friends in program;
4. The student can balance demands of Macy courses with family and social commitments;
5. The student can see differences between Macy program and regular program;
6. The student perceives Macy teachers and staff as supportive;
7. The student perceives parent(s) as supportive.

The first-year experiences and activities in the Macy program are central to the student's assimilation. It is through these experiences that the students form perceptions about the value of the program and whether or not they can fit in the program. It is also through these experiences that relationships are established and nurtured among and between students and Macy staff.

In Billy's case, he thinks the program can help him accomplish future goals; he is balancing academic demands with the social demands from non-Macy friends; and he has a supportive parent. Factors which might threaten his assimilation, based on the interview, are: he does not have a clear picture of what to expect in terms of academic load; he has yet to develop a strong identity with his Macy class; he has yet to develop a cadre of Macy friends; and he has not perceived any substantial differences between his Macy teachers and classes and the regular program other than increased homework.

Case Study #2: Jeane Windland

Student Profile:

A tenth grader in the Macy Bioprep program at a high school on the Navajo Reservation, Jeane Windland is a reserved young woman who is both capable and determined. In her physical appearance, as well as in her life, there appears to be a sense of order and balance. Her athletic frame, neatly trimmed short brown hair, and smooth tanned complexion tell you right away that she enjoys sports and being outside. In fact, Jeane was named All Conference this past fall for girls' cross country. In addition to track, Jeane plays volleyball, holds a class office, and is active in a variety of clubs at her high school.

Academically, Jeane is doing quite well. With a GPA of 3.67 for the fall, 1988 semester, she ranks in the top 2 percent of her class. As a sophomore in the Macy program, she's earning a B in introduction to biology and chemistry, B in honors geometry, A in algebra II, B in honors English, B in world history and geography, and A in health. Last year, her records indicate she accumulated an average of five absences per class second semester, and her GPA dipped to 3.1, with C's in her three Macy courses for the term. This year she has been absent four days, and her performance, according to her English teacher, has dropped from a B to a C. Still she describes Jeane as an above-average student.

Her strength as a student, says one Macy instructor, is her ability to get along well with others and work as part of a team. While she will not strike off in a different direction, she will speak her mind when she is asked a question; and her answer will show some reflection. "She's not a teacher pleaser; she's real solid," says the teacher. "She'll sit back and watch and when [she feels] more comfortable, she'll join in."

This tendency to hold back concerns her English teacher. "I can see in the future that if Jeane doesn't push herself to ask questions and speak out she could miss out, and also [her teachers] could miss out because they wouldn't realize they have someone here who has knowledge and ability and skill like everyone else or better...," she explains.

At home, Jeane is one of seven children. She has four sisters and two brother. Her mother, according to Jeane, works as a legal secretary. She left high school to have Jeane at 17. Her father attended college and lives in Tucson where he has his own accounting business. Jeane's parents are divorced; her mother has remarried. Both natural parents were born on the Reservation; her mother is Navajo and father Hopi.

Program Entry:

Jeane entered the Macy program as a ninth grader. She received a letter at the end of her eighth grade year inviting her to participate in the summer session. Since she did not have other plans, she decided to give it a try; and once in the program, she found it to be fun so she kept going.

Neither Jeane nor her mother knew a lot about the program before she entered, but her mother says Jeane's interest has always been in going to school and making something of herself. Perhaps Macy offered Jeane the chance to do this, "to become somebody," her mother speculates.

Assimilation:

As a second year student, Jeane seems to have cleared the hurdles of assimilation. She feels part of the Macy group, and she says most of her friends are in the program. She has a good sense of academic expectations. "You have got to remember so many items and be real responsible, studying on your own, making sure you know the material before you go to class..," she says. And over the last year, she has been able to define some of the differences between the Macy Bioprep and regular teachers.

"They [Macy teachers] expect more out of you ... to be better than average ... the way they look at you, they expect you to do more. They want you to be more," says Jeane. She sees the Macy staff as supportive and really interested in students.

Jeane can also differentiate between what goes on in Macy and regular classes. "...like my health class, people won't ask questions. In Macy classes, they'll ask questions and sometimes get into a little disagreement and start arguing, trying to solve the problem."

For Jeane, classroom and summer enrichment activities, such as attending the University of Alabama program, seem to have fostered a strong identification with the Macy program. Even though she carries a lot of responsibility at home in helping her mother with the younger children and chores, she has learned to balance the demands of Macy classes with her commitment to her family and her love of sports. In fact, her English teacher puts her in a very small group of students who are able to manage the demands of being both an athlete and scholar. For Jeane, schoolwork comes first, and she thinks her mother understands this. And while her mother may not know a lot about the program, she encourages Jeane and is supportive of her participation.

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Retention:

During the last year and a half, Jeane has established a strong network of support. Besides her mother's encouragement, Jeane has a lot of friends in the Macy program; in fact, her mother says one of her best friends is in Macy and she gives Jeane much encouragement. Jeane also sees her teachers as being interested in her progress, and she knows they are there to help when she needs it.

Even with the support of her mother, friends, and Macy teachers to keep her on track, Jeane needs a reason to keep running, especially as the courseload becomes more demanding. For the present, she knows she has to keep her grades up to play sports. Plus she knows the program is helping her prepare for college. Still she is undecided about long-term career goals.

She is fascinated with her father's business in Tucson—and that he gets to travel and help his people. The thought of joining him and helping him expand his services has allure. Then, too, so does a career in computers. Most importantly, however, she says she wants to do something with her life and help her mother and the people on the Reservation.

Whether or not Jeane will follow her father's footsteps is not clear; however, her mother knows she does not want Jeane to follow her path and "end up being a failure, having a lot of children ... being a housewife and taking care of all the children" all alone, she explains. In fact, Mrs. Windland said she wanted Jeane to be present at the recent birth of her brother so she could see what it was like—"all the pain, and then to know that that's just the beginning."

While Mrs. Windland is not actively involved in the parent activities, she encourages Jeane to do her best and talks to her about college. She hopes all of her children will go to college; she just does not want them to go to a school too far from home. Jeane says that while her mom does not push her, she wants her to be successful and happy in whatever she does.

While Jeane shoulders a lot of responsibilities at home and school, she does not perceive any threats to her staying in the Macy program. She has not let the labeling of Macy students as "nerds" or "scholars" by other kids get to her. In addition, she knows she has to sacrifice time with her friends to keep up with the work. And though there have been times when the workload has been demanding, she says its nothing she could not handle.

So far the program has been what Jeane expected. The only thing she would like to add is an extra class to help her prepare for college admissions testing. She found the after school sessions last year for the ACT to be worthwhile.

Jeane realizes she is having a little trouble in some classes, but overall she thinks she doing all right. She is determined to put school work first, and she appears confident she can handle the challenge.

Program Impact:

According to Jeane, the Macy program has helped her learn to be more responsible and to stand up for what she believes in. It has made her more determined about accomplishing her goals and given her a better understanding of school in general. She knows that to do well, she has to work hard; and sometimes this means staying up late at night and then rising early in the morning to study. She believes being a Macy student will help her get into college and, once there, to feel comfortable.

Besides having an impact on her own future, Jeane believes that her participation may have an effect on her younger sister. After hearing Jeane talk about all the opportunities and trips, the sister is considering being in the program too.

Jeane's English instructor sees the benefits in different terms. "What will she pull out of it? The scientific method, exposure to science. Hopefully, she'll feel more comfortable with science, and she'll be able to function quite well with English, writing, reading, and speaking English. Hopefully, she'll be a little more assertive ... experiences will help her expand her view. Most importantly, the program will give her the knowledge and ability and confidence that whatever she wants she can go after and take."

The teacher also thinks the Macy program builds reality. "We say shoot for the moon ... but we also show you it's possible.

Analysis:

Goal clarification seems to be the central issue for Jeane Windland. She appears confident and comfortable in the Macy program, and she has learned to balance school, sports, family, and friends. Yet she does not have a clear picture of what she wants to do and how being in the Macy program can help her accomplish her goals.

Some important questions related to this issue are:

1. What is the relationship between goal clarification and retention. Are students who have clearer goals regarding college and career more likely to stick with the program and get more out of it?

2. How does parent encouragement affect goal clarification? Are students whose parents are more actively involved and more specific in their encouragement more likely to develop clearer goals?

3. To what extent can Macy teachers and staff help students clarify college and career goals, especially in the absence of parental support and direction?

So what options can Jeane choose from? What sort of counseling and exposure to different professional paths will she have? Without a clear reason, a real life picture, of what she can become, what will sustain and compel her to stick with it, through the Macy program, through college and beyond?

Case Study #3: Carolyn Tomas

Student Profile:

"My grandfather, a medicine man, he tells me to go running in the morning and you'll get better things in life cause you get up early to meet the sun...," says Carolyn Tomas, an eleventh grade student in the Macy program at a high school on the Navajo Reservation.

Friendly, outgoing, active in school athletics and clubs, Carolyn wants those better things—a college education, a career in teaching—she wants people "to look at her and say, `there she is. I want her to help me.'"

Carolyn loves sports; baseball, volleyball, running, horseback riding are very much a part of her identity and probably come quite naturally to her. Tall, slender, long brown hair flowing over her shoulders—there is an unmistakable grace to her movements, face, and voice.

Conversation also comes easily to Carolyn. She openly shares her dreams and her shortcomings. According to her physics teacher, Carolyn feels comfortable in both supportive and leadership roles. She is quite tactful and helpful. "She's a wonderfully friendly person. If you want some kind of support, she's there," he explains.

As a third year Macy student, Carolyn admits and her Macy teachers confirm, that she's not doing so well. As of the fall semester, 1988, she was ranked in the upper third of her class. Her cumulative grade point average is 2.63. Over the last two and a half years, she has struggled with her Macy courses, especially science and math. For example, she has not earned higher than a D in introduction to physics, biology/chemistry, and physics. In Macy and honors English, she's earned C's. As of first semester this year, besides the D in physics, she had a D in algebra II, B in free enterprise, B in American studies, and A in marching band. She averaged 4 absences in her classes first term, and in previous years, her attendance appears to have been fairly stable.

According to her physics teacher, Carolyn has a problem with getting her work in on time. He thinks she is too busy with too many other activities. Even Carolyn says her extracurricular commitments and sports put her behind. With games during the week, she sometimes misses class and then, after getting notes from friends, has a problem understanding the material.

As the oldest of the five children at home, Carolyn helps a lot with child care and housework. Her oldest brother attends the University in Flagstaff. She also has two younger brothers and two younger sisters. Her parents are both Navajo, and both were born on the Reservation. English is their second language; in fact, Carolyn says she did not learn English until she started school.

While her father graduated from high school and attended a community college, her mother did not finish high school. At present, her father is a union construction worker; his job requires some travel. Her mother makes jewelry and other Navajo crafts to sell to the tourists. Carolyn seems to be quite close to her family, including grandparents and especially her grandfather, the medicine man for the tribe.

Program Entry:

At the end of her eighth grade year, Carolyn's parents received a letter saying she was being considered for the Macy program. Since they were interested, they contacted the Macy coordinator, who told them about the summer orientation program on campus. Carolyn attended the summer program, which emphasized basic skills and introduced higher level math.

It is not clear whether Carolyn or her parents knew about the program before she entered. It seems both Carolyn and her father saw entry as being a selective process, with her performance in junior high school being a reason for consideration. Given the admissions process for the first group of students (anyone who wanted to participate was admitted), their emphasis on grades and the letter seems noteworthy.

Assimilation:

As a third year Macy student, Carolyn feels a part of the Macy group and she has a lot of friends in her Macy classes. She believes that being a Macy student can help her accomplish future goals. She sees Macy teachers and staff as being supportive, and she knows that her parents want her to do well in the program.

She also can articulate the differences she sees between the Macy and regular program. For example, in her Macy classes, such as English, she thinks the subject material is covered in greater depth. While she is not sure the work is harder in Macy classes, she says there more of it.

As for the Macy and regular teachers, Carolyn sees a big difference. "My teachers are really outgoing. They're really there for you. They always say if you need help, come. Other teachers really don't do that. They don't commit themselves. Our teachers, they're there and they care."

And Macy students? Carolyn says, "Students in the regular program are as smart as we are; they just don't want to use it..." Kids in the regular program "don't realize they have to grow up," she says. They think they can stay

home and have their parents support them she explains. "They don't want to go off the reservation. They want to stay here where they don't have to pay taxes. They're taking the easy way out."

The one issue of assimilation that Carolyn has not resolved yet appears to be balance. Perhaps she is pulled in too many directions and feels commitments to too many activities. This semester she says she has given up French club so she could focus on softball. And she used to play volleyball but had to give it up because of a family problem.

Even her parents say she has too much going on. They are concerned that because of her poor grades she may not have the credits to get into college. In fact, Carolyn says that they have restricted her activities until she brings her grades up. Still, they and Carolyn think the answer lies in pushing herself harder: "...Once you get your mind into it you can do it. You just think `I can do it' and you get the grade...," says Carolyn.

Retention:

Carolyn seems to have almost all the ingredients to be successful in the program. The Macy teachers and staff provide her with a lot of support, encouragement, and extra help. Her Macy friends enhance her identity as an "honor" student, though she still does not like the name-calling and ridicule by non-Macy peers. Also, her parents know that the program can help her get a good education; her mother, in particular, encourages her to go beyond high school, to go to college, and to have better things than they have.

Carolyn definitely sees college in her future and even has a specific university in mind. Beyond college, she hopes to become a teacher—off the Reservation so that she can show others that a minority can succeed. Later in life, she says she would like to return to the Reservation and teach her people what they have to gain through learning and attending school. On a more personal level, she simply wants to be "somebody" and make something of herself; and she wants her parents and her people to be proud of her.

However, Carolyn is struggling academically to stay in the program. One instructor remarked that he does not see Carolyn as a typical Macy student in terms of academic strength; instead he sees her "at the lower end of the spectrum." Another problem may be her courseload in that she is taking algebra II and physics at the same time; both courses require a strong math background. In addition, the teacher, as mentioned above, thinks Carolyn may be spreading herself too thin and, thus, her school-work suffers.

Carolyn, too, sees her struggle with academics as being a key threat to her staying in the Macy program. She thinks her study habits are preventing her from keeping up her grades. She has the drive and inner confidence, and she says she is making the effort to get extra help by sometimes attending studyhall at school in the evenings. Taking the easy way out, as she says the regular students do, is not her choice. "I want to work for it. I want to take the hard way around," she says.

Program Impact:

Carolyn, her parents, and teachers all think her participation in the Macy program can give her a better chance for college, if she can get her grades up. Carolyn believes that top colleges will give Macy students preferential consideration. She and her parents hope that the more advanced classes will prepare her for college level courses and that her participation in Macy may help her get a scholarship. Her physics teacher thinks Carolyn and other Macy students benefit from the special ACT and SAT preparation workshops.

In addition to preparing her for college, Carolyn's participation has helped her clarify long term career goals. During her freshman year, she says she had no idea about what she wanted to be. As a Macy student, however, she has had the opportunity to listen to speakers from various career fields and to get information from counselors.

Besides having an impact on Carolyn's future goals, the Macy program also has given Carolyn self-respect says her physics teacher. "It's nice to belong to Macy. [Carolyn and her friends] are perceived to be better students," he says.

Analysis:

Carolyn Tomas is a mystery—to her teachers and the Macy staff. She has all the right answers. Her future goals both for college and career seem clear and realistic. Her peer, parent, and school support network appears to be strong and functional. Yet, in her third year, she is still struggling academically.

Can she do the work? Does she have the ability? Is she lacking the commitment to make schoolwork and her education a priority? Interestingly, during the interviews, instead of focusing on what Carolyn has had to give up to be in the Macy program, both she and her parents talked about what she could gain from the program.

For example, when asked about tradeoffs, Carolyn mentioned "straight A's" in other courses. When asked whether or not being in Macy had affected her social life, her response was "no." While Carolyn may hold a very clear picture of her future, the way to get there still seems ambiguous. Though she wants the better things in life, she, as yet, has not chosen to get up with the sun. In other words, she has not been able to balance all the demands on her time nor establish priorities.

In terms of assimilation and retention, then, several questions arise regarding the link between a student's ability to balance and prioritize his academic, social, and family commitments.

1. What is the difference between balancing and prioritizing?

2. Does one occur before the other?

3. What is the significance of the two actions in terms of assimilation and retention of Macy students?

On a more literal level, one can balance many items at one time. The variables appear to be the number of items in balance, their relative weight or importance, and the effort and time one has to devote to the balancing act. A first year student in the Macy program, one might assume, has fewer academic commitments and, therefore, can devote more effort and time to maintaining balance among a number of demands.

Prioritizing, on the other hand, necessitates a choice. One item becomes more important than all the others; a schema is established to determine which item requires the most effort and time. In the second and especially in the third year, Macy students hit the "wall." Advanced science and math courses require considerable academic commitment. No longer is it possible to balance all the items all the time; the student must establish which is most important and then commit effort and time accordingly.

In Carolyn's case, one sees a student who, based on her academic performance, had problems not only balancing commitments as a freshman and sophomore, but also is experiencing difficulty in prioritizing her activities as a junior.

Case Study #4: Paul Redcliff

Student Profile:

Paul Redcliff, a twelfth grader in the Macy program at a high school on the Native American Reservation in Arizona, comes pretty close to being a classic example of what is right with today's youth. He takes school seriously. He is an independent thinker instead of a crowd follower. He has managed to keep his traditional values, gets along with his parents, and is very much a family person. According to his anatomy and physiology teacher, Paul is "easy going but serious and playful enough to be a real enjoyable character."

At school, Paul is active in clubs and sports. He is a member of the student council and was named All Conference in football last fall. This spring, his classmates elected him to reign as Prom King. Besides extracurricular activities at school, Paul also volunteers for special community projects and takes part in tribal ceremonies.

Over the past three and a half years, Paul's academic performance has greatly improved. For his first semester as a freshman, his GPA was 2.0; his GPA first semester as a senior was 3.02. Paul's performance in Macy courses show steady progress. For example, as a sophomore, he pulled up a D in first semester biology and chemistry to an A second semester. At the end of fall semester, 1988, Paul had an A in honors English, C in honors advanced math, B in Macy anatomy and physiology, B in honors government, and A's in Spanish and painting I. He ranks in the top 10 percent of his senior class.

Paul's strength as a student, says a Macy Bioprep teacher, is that he is a hard worker. He knows when something has to be done, and he sacrifices to do it. "He doesn't get frustrated," says the instructor. Problem areas for Paul seem to be language skills—spelling, expression—but he has made improvement in this area, reports his teacher.

At home, Paul helps out with chores and the younger siblings. He says he loves working with children. He has a brother and two sisters. His father, who was born on the Reservation, never finished high school. His mother, who was born in Mexico, finished high school and is working toward a college degree. Both parents work for the school system: his father in maintenance and his mother as a school secretary. English is the second language for both parents.

Program Entry:

As a senior, Paul is a member of the first Macy class at his high school. He remembers in eighth grade a big assembly where he first learned about the program. "They said we might have chance to go to California. I think that got everybody's attention ... 100 or some students signed up." But even before the assembly, Paul had heard about Macy from his mother, who had learned about it from one of the teachers in the district.

At that time, a screening and selection process had not been established. One staff member says, "...we were taking any warm body [and] had kids who really shouldn't have been in the program." Paul and his mother admit he was not one of the top students in junior high; his grades were not particularly high. Still, even though he was not that interested in the program, Mrs. Redcliff wanted Paul to participate.

Besides his mother's urging, Paul also had observed his older sister, who is currently living at home with her first child. "It was interesting ... cause my sister was already going through the school and she said the classes were easy [and that] she wasn't really getting anything out of it," he says. So Paul attended the first Macy summer orientation program at the high school and began the program as a ninth grader in the fall of 1985.

Assimilation:

"I'd like to go back to our freshman year. If I knew what I knew now, I'd like to go back and relive it. I was just kind of in it. I didn't have my priorities straight," says Paul. Paul's initial focus, it appears, was not on what he could get out of the program; instead he was more interested in just fitting in. That first year, Paul and his Macy classmates "were looking at everything differently," he says. They had to dress right and fit in to the larger student culture at the high school. Yet they were set apart from the regular students. They had a three-hour block of classes out in a trailer. And, as other Macy students, Paul had friends both in and out of the program. But, he recalls, the other kids really didn't bother them that much; perhaps this is because the Macy program was new and no one knew that much about it.

Gradually over the first two years, Paul's identity as a Macy student grew stronger. Summer enrichment programs, college visits , guest speakers, the promised field trip to California, and internships with the local hospital or other government agencies provided a common base and helped Paul differentiate between his experiences as a Macy student and those of students in the regular program.

"I found that it's a better quality education ... it's more challenging ... it pushes you harder and makes you learn more than the regular program..." he explains. His comments about what happens in Macy classes are more

specific. In regular classrooms, he notes, desks are arranged in rows; in Macy classes, they're arranged all the way around the room with the middle open or in groups of three or four people at a table. Besides the arrangement of desks, Paul also notices differences in what happens in Macy and regular classes. "[There are] plenty of discussions. [In] other classrooms it was more of the teacher telling them what to do out of a workbook or textbook ... not as much student talking ... not as much teacher to student contact."

A Macy Bioprep teacher reaffirms this opportunity for more student-teacher interaction. He uses "inquiry type" teaching in his Macy classes. Plus there are more hands-on activities. These methods allow him to work with all the kids and to see how their minds work, he explains.

As for differences between Macy and regular students, Paul says, "I don't really see a difference anymore. They have the same potential, but they don't really develop it."

Retention:

Since his freshman year, Paul has become a much better student, acknowledges a Macy teacher. "There was something lacking that's not lacking now. [It] could have been a sense of direction." What clicked for Paul so that he chose to stay in the Macy program, to develop his potential?

According to Paul, Macy teachers and staff have provided encouragement, support, and direction. When there's a slump in your work, he says "Macy teachers ask you what's wrong ... they tell you what you're doing really well..." Also, Paul explains, Macy teachers say, "You've got to do well ... it's much harder once you get out in the real world. [They] tell us college is a lot of fun; you have a lot of free time. You have to decide what to do with it. If you do the wrong things you're not going to succeed ... it's not the hardest thing but it's up to you."

Paul's mother has also been influential. "She's the one that really pushes me to get my grades ... She says you're going to need it later on...," he says. But Mrs. Redcliff doesn't just encourage Paul to do well, she also understands the demands of the program and his need for quiet. She encourages him to go to the evening study halls at school, and she has become involved in Macy activities herself. Being a school system employee, she knows how to get things done for her children, and she knows the teachers and Macy staff, as well as the kids. In fact, she says she has been chaperoning Paul's classmates since they were in kindergarten.

Besides his teachers' and mother's support, Paul also knows he can get help from his classmates. Yet he doesn't talk much about his relationships with other Macy students. He did mention that the higher you get in class ranking, the more competitive he has seen students become. He also says non-Macy students have a lot more time to go out and party and kick back. He, however, admits his priorities are different.

"My education comes first and then it's family and keeping in touch ... [that] doesn't leave much time for other things," says Paul, who puts in roughly three hours of studying a night. He thinks his grandparents and other people in the village have helped him clarify his priorities. He explains, "...They say look what this person did ... didn't get his education, stayed out, did the wrong things. See how he turned out. They ask me if I want to be like that. I changed gradually I guess."

With his priorities firmly established for the present, Paul also looks ahead to his future. He wants to attend the university and come back to serve his people as a veterinarian or in environmental health. "I see a lot of problems that can be solved here. Something could be done...they don't just go away...," he says.

Even with a strong network of support and a clear sense of direction, there have still been times when staying in the program was a real challenge. He says the toughest part has been keeping up his grades. Mrs. Redcliff also mentioned that in the Indian culture, kids aren't really taught to be outspoken or assertive. She says they've taught Paul, however, to say what he thinks.

Program Impact:

As a Macy student, Paul has changed the way he sees his future and the world beyond the Reservation. He knows education is a must. Without Macy, he says he probably would have ended up at a technical school or in some sort of business—maybe babysitting, he jokes. A Macy teacher agrees that the program has helped Paul set his sights beyond a two year institution. Even if he did choose to go to a four year college, he may not have survived, says the instructor. "I think the chances are much higher now that he's going to be successful...he's a lot better prepared scholastically and emotionally."

His career goals, too, have changed since being in the program. He says at first he wanted to be a fireman, but Macy changed his direction into the medical field. "It made me want to come back and help out around here. There are a lot of problems," he explains.

Over the last three and a half years, Paul has gained a greater awareness of his own potential and the world at large. He says he can comprehend more and that he has more ways to handle a problem. Paul says he has also gained a better understanding of social and local problems.

Through his Macy experiences, Mrs. Redcliff believes Paul has also learned that "no class is ever too hard. As long as you are willing to earn the grade, you can get around it,

you can get help." In addition, she says his travels as a Macy student have introduced him to different ideas and people. He has learned that he can make it in the outside world.

Analysis:

All the pieces of the puzzle seem to be in place for Paul Redcliff. Yet, his chances of surviving and succeeding four years ago, did not seem that great. Based on his academic performance and his minimal interest in the program, the odds were not in his favor. In fact, if academic performance had been used as a screening factor, Paul even may not have been accepted into the program. Thus, key factors in his entry appear to have been his mother's knowledge and influence, as well as Paul's desire for a different high school experience than what his sister had had.

Because Paul was part of the first Macy class, he was, in a sense, defining the program for future students. It seems natural, then, that during the interview much of what he had to share focused on the differences between Macy and the regular program. This appeared to be a key issue of assimilation for Paul.

During the second year, something "clicked" for Paul. His GPA jumped from a 2.83 first semester to a 3.40 second semester, and he has maintained at least 3.0 since that time. It appears several factors were instrumental in Paul's progress and commitment. First, he saw his teachers as supportive. They seemed to know when students had problems, they talked about college and challenges beyond high school, and they offered encouragement.

Second, his mother offered specific encouragement and understood his needs; she was also actively involved in Macy activities and perhaps served as a positive role model. She had been to college; she knew it was important for him to go. Third, the negative role models in his family and the tribe provided real life examples of what he did not want to become.

Finally, Macy experiences expanded his horizons. They showed him that there is a world beyond the Reservation and he could not only survive out there but also have an impact. To do this, Paul knew education and school work would have to become a priority.

What impact has the Macy program had on Paul? What grand scale picture of the future do the pieces in the puzzle create? He now has a better chance of attending and surviving a four year university, as well as clearly defined career goals in a medically related field. And, perhaps most importantly, Paul has the desire to return to the Reservation and help solve the problems of his people.

Case Study #5: Robert Gerard

Student Profile:

Robert Gerard is a ninth grader in the Bioprep program at a high school in Alabama (the Macy program is called the Bioprep program at the Alabama high schools). He is a talker—and a smooth one at that. Personable and charming, this African American student says he is willing to try anything once. He likes being his own person and discovering things for himself rather than following in others' footsteps.

Robert's biology teacher describes him as an "absolute delight." She adds, "He's a very strong personality. He loves to talk. He wants to explain his position to everybody." Both his teacher and mother say Rob gets along well with the other students. Mrs. Gerard believes her son shows a lot of maturity for his age, as well as strong leadership qualities.

In school, Rob takes his work pretty seriously. He reports he has not missed one day of school in the last six years. After the first semester in the Bioprep program, he is holding a 3.2 GPA. He earned a B in BP (Bioprep) biology, B in BP English, A in BP geometry, B in BP English 9, B in BP Alabama history, A in typing I, and A in marching band. While Rob is quite verbal, his biology teacher says he has a problem synthesizing material and coming up with a conclusion.

As for extracurricular activities, Rob is not a "joiner;" unless he sees a value in an organization, he will not become involved. At his high school, he plays drums in band and is on the math team, but has chosen not to participate in other clubs. "To me, they [the clubs] didn't mean anything...I looked at what they were doing and it wasn't really nothing too extravagant," he explains. He is, however, involved in church activities.

At home, Rob, who turned 15 in March, is one of three sons. His two older brothers attend college—one at the University of Alabama and the other at a smaller minority college in state. His mother is a homemaker and his father works for one of the area's larger corporations as a commercial artist. Both parents were born in Alabama and have a lot of family nearby. Both speak English as a first language, and both finished high school. His teachers and the school counselor believe Rob comes from a stable home. Evidently, Mr. Gerard is a strong and positive role model for Rob and his brothers.

Program Entry:

Rob first learned about the Bioprep program in eighth grade from his algebra teacher. He says he and a handful of other students had taken a test in seventh grade that tracked them for algebra in the eighth. He sees that algebra class as "really part of the program." He says he started hearing about Bioprep then.

The decision to enter the program in the ninth grade was difficult for Rob. He and a select group of classmates attended an assembly in the spring of their eighth grade year. Besides the assembly, materials were sent home to the parents, reports Mrs. Gerard, who had heard about the program from a girl at church.

Many of his friends did not see any real advantage to being in the program. "Everybody was telling me, 'You don't need to get into it...it's just like what everybody else is doing so why don't you just get in with everybody else.'" His cousin even told him she thought it was stupid. Another cousin who was in Bioprep, however, told him there wasn't much difference between the honors program and Bioprep and that it was "nothing too difficult." Rob says he just sat down and thought about it for three days. "I felt the only way to find out was to get in it...," he explains.

Assimilation:

Rob is quite clear about what he expects to get out Bioprep. He believes that it will open more doors for him in the future. "We are able to get into the programs at U.A. (University of Alabama), and our names are introduced into more places than if we were in the advanced classes. We get the tests [PSAT, SAT, and Bioprep] and we get introduced to the things we will need in the future earlier so we can prepare now," he explains.

He also thinks that as a Bioprep student he will have a better chance of getting into a college he wants and even getting a better job. "When they see I was part of the Bioprep program, that's going to have a little more push for them to take me than to look at someone [else] who has my grades and everything...it's just a mind thing. They will look at me and want me instead," he adds.

As of yet, Rob is not very sure about the differences between the Bioprep and honors program. On the one hand, he sees Bioprep and honors classes as being pretty much the same, being based on the same curriculum and using the same methods. On the other hand, he thinks Bioprep classes cover different material. And he sees only his Bioprep biology instructor as employing different teaching strategies.

"Maybe it's because a couple of teachers haven't really learned to differentiate between the two (Bioprep and honors) classes...[The biology teacher] has the experience so she teaches us differently...," explains Rob. He says she is pretty loose, but she drives the point home when work has to be done. He also likes the heated discussions in her class.

Rob offers an explanation for the differences in teaching styles: "Really, I think it's the teachers in general don't know how to teach us different...or take our perspectives and use them in a positive way...it might be because they haven't had enough training and the program is young in Alabama."

As for differences between Bioprep and other students, Rob believes that because he and his classmates had to achieve more to get into the program, they should be better. He takes great pride in being in the Bioprep class of 1989. And there has been at least one significant experience to help him identify with the Bioprep program—the three day Cold Spring Harbor DNA workshop. Rob says the experience "was unique because in most classes [teachers] will teach you but you never get into and learn it." During the workshop, however, they got to roll up their sleeves and work with DNA to get a feel for what it could do.

Though Rob did not mention having developed any close relationships within the Macy group, he did talk about two young men in his biology class who, like him, participate in discussions. The trio seems to have developed a sense of comradery in their outspokenness. His mother mentioned that Rob does not see his old friends as much as he did prior to joining the program. Even Rob says he left half his friends when he went into Bioprep. Still he thinks he leads a productive social life, and he seems satisfied with how he has fulfilled his commitments to family, friends, and school. "I'm just balancing them all out and keeping them where I want them to be," he says.

And while he keeps everything in balance, his parents seem to support his efforts. His mother is happy he is in the Bioprep program. She thinks the program is a great opportunity. It pushes him and encourages independent thinking. According to Mrs. Gerard, "Before, school wasn't really a challenge. Now he wants to keep up. I appreciate this. It's so easy for them to get bored."

Retention:

Mrs. Gerard thinks one reason Rob will stay in the program is his ambition to achieve and the status that goes with being in the program. She and Mr. Gerard not only support Rob but they have also become involved by attending parent meetings and conferences. They know a few of Rob's Bioprep classmates and their parents.

The influence of Bioprep teachers and staff, at this point, does not seem to be as widespread as at other schools, perhaps. Certainly, Rob feels connected to his biology teacher, but he did not mention any other teachers that have made a real difference. In fact, he seemed to see the school counseling staff as being there to help only in times of trouble.

Peer influence is a different story; it is very important says Rob. While he does relate well with other students in the program, he also has a tough time dealing with the competition. "You would like to see the other person succeed, but not as much as you," he admits. "I want [them] to do well, but I do not know if I'm going to be accepted to colleges, I'll have to be in the top 3 or 4 percent of my Bioprep class and at least in the top 20 percent overall."

Rob has a strong sense of direction. He knows he wants to go to college and is hoping that a scholarship will enable him to attend an out of state school. He prefers a university either on the west coast (since he is an Oakland Athletics fan) or in the Northeast; and he knows he will have to work to get it. At present, he is considering a career in computer science, but most importantly he wants to be well enough off financially to help other people.

Even though Rob is just finishing his first year, he knows that getting a good education is important. And while he thinks he could be doing better, he does not see the program as anything he can not handle. "It's nothing too hard; it's just what I need to do," he says.

Program Impact:

"When you get into this program you start growing as a person because it does allow you to be an individual...so many things are expected of you," says Rob.

Being in the Bioprep program has not only given Rob a better sense of himself but also a clearer sense of what he wants in the future and what he has to do to get it. He knows it is important to be in Bioprep, to get good grades, to score well on the PSAT and SAT. And he knows the trips to the University of Alabama to learn study skills and other experiences will help him in the future.

In addition, the Bioprep program, and in particular his biology class, has provided Rob a forum to share his views and to become an active participant in the learning process. He can now articulate the difference between just receiving information passively and participating in hands-on activities, as he did in the DNA lab.

What if he had chosen not to participate in the program? Mrs. Gerard believes Rob's sense of achievement is closely tied to the Bioprep program. Without it, she says, "he would be quite disappointed."

Analysis:

This case study points out the tough decisions some students have to make when entering the program. Rob was pulled in many different directions by his friends. Yet, he was willing to give it a try. He perceived selectivity in the screening process and status in being part of the program; and he developed a clear sense of what he could get out of the program early.

As with other first year students, assimilation appears to be a key issue in this case study. Rob has yet to differentiate clearly between the Bioprep and honors program at his high school. Both Rob and his classmates are looking for more experiences which set them apart—experiences like the DNA lab and field trips. His problem with differentiation is also evident in that he makes little distinction between his program teachers and non-Bioprep instructors.

Teacher and staff support also seem to be a significant factor of assimilation in this case study. Rob did not mention support or encouragement coming from his teachers. That does not necessarily mean his teachers are not supportive, just that perhaps their encouragement has not been a significant source of motivation for Rob.

Finally, Rob's case study supports the importance of parental support, encouragement, and involvement, as well as goal clarification. Both parents and especially his older brothers provide positive role models. Rob not only knows he will go to college, but also that he has a chance at going to a good college.

Two questions, then, arise with regard to Rob, in particular, and the Bioprep program at his high school, in general.

1. To what extent can the Bioprep program help him define career goals and visualize more specifically his future?

2. To what extent has the Bioprep program been accepted by teachers and integrated into the curriculum at his high school?

Case Study #6: Kent Marshall

Student Profile:

A writer, musician, serious student of genetics, Kent Marshall, a ninth grader in the Bioprep program at a high school in Alabama, has many interests. But, unlike many young people his age, whose interests change with the weather, Kent digs deeper and works toward mastery of a subject. He seems intensely committed to whatever he does.

For example, last year Kent penned a novel; this year he voluntarily wrote a paper on genetic engineering after researching the topic at the University of Alabama libraries. He plays the trumpet and professes a deep love for jazz and big band music. And though his interests may seem diverse, he is very focused.

Kent's Bioprep biology teacher says he is also very capable. "He's not frivolous, doesn't play like the other students. Kent thinks about things in a different way than most ninth graders. He's very, very serious," she says.

Academically, Kent is off to a good start. For the first semester, he earned an A in BP biology, B in BP geometry, A in BP English 9, B in BP Alabama history, and A in marching band. His GPA is a 3.8. This year he reported only one absence.

In a group, Kent, nicknamed Wally because of his resemblance to Wally Cleaver of the popular television rerun "Leave It to Beaver," is much quieter than the other kids says his Bioprep teacher. Other students do not seem to interact much with Kent. In fact, he says many of his friends are older than he is. Perhaps this is because of his size—he is tall and large-boned—and his physical presence could be intimidating to students his age.

Outside of class, Kent participates in junior beta club, junior honor society, and jazz band. He also tutors other students in English grammar and enjoys a game of backyard football or basketball when he has the time. For another student, says Mrs. Marshall, all of these commitments might be a problem. But for Kent, "everything is fun...he's a well-rounded child," she says.

Kent's home situation seems very stable. His parents place a high value on achievement and productive pursuits. "The idle mind is where the problems come in with many of our young people," says Mrs. Marshall, who has spent the last twelve years volunteering in her children's schools. Kent has a much older brother, who is out on his own, and younger sister, who is in middle school. His father works in management for a large mining company, and his mother reports she is self-employed. The family's ethnic heritage is Caucasian. Both parents were born and grew up in Tuscaloosa.

Program Entry:

Both Kent and his mother knew about the program before he entered last fall. Kent says he heard about Bioprep from upperclassmen. He remembers one friend told him there would be days when he would want to go home and just cry. "I laughed at her," says Kent, "but now that I'm in the program I see it's not so easy."

As other Bioprep students in his class, Kent had been tracked into algebra I in eighth grade. He knew Bioprep would offer him bonuses, such as university classes, workshops, and summer enrichment programs, that the advanced honors track would not; so after thinking about it and talking it over with his parents he decided to go with it.

Assimilation:

Upon entering the program Kent had a good idea of what to expect. He knew Bioprep courses would be harder and that he could not expect to make straight A's. He also knew that being in the Bioprep program meant giving up electives since his high school does not have a seven-period day. Yet, he believes the sacrifices and hard work will prepare him for college and beyond.

Because of his friendships with upperclassmen in the program and his prior knowledge about what to expect, Kent's identity as a Bioprep student seems firmly established. In addition, he sees clear differences between the Bioprep and advanced honors programs. For example, Kent says some teachers give Bioprep classes more to handle. Also, he says, "In a normal class, you cover specifics, learn that, and go over it a lot. In Bioprep...you get a much bigger, broader picture".

In Bioprep classes, there are more discussions and the discussions are more fun because they cover a wide range of topics, says Kent. In addition, students are held accountable for material assigned in the book, but not necessarily discussed in class. Because of these differences, Kent believes students have to change the way they study for Bioprep courses. "Whereas before, you may have been memorizing information for a test, in Bioprep you have to learn it," he explains.

In his efforts to meet the first year challenges of Bioprep, Kent knows both his parents and teachers support him. He and his mother mentioned the Bioprep biology teacher, in particular, as one who listens and offers great support. And Mrs. Marshall not only supports Kent but the program as a whole. "When you're in a classroom, you're going to have people on all different levels and many times the children who have difficulty will act up and disrupt and eat up valuable learning time. The beauty of pulling these

children aside is...that they all have the same goals, they're going in the same direction ...," she adds.

Balancing his commitments does not seem to be a critical issue for Kent, as a first year student. Mrs. Marshall reports that all of his friends are in Bioprep so his social life is very much centered around his Bioprep experiences. Also, Mrs. Marshall appears to be the type of parent who would go out of her way to ensure that home and family commitments would not interfere with school responsibilities.

Retention:

"There's a certain something you have to develop to survive in a program like this, but that's good. It's going to be a tremendous asset once you get into college," says Kent.

The Bioprep program has definitely challenged Kent. He says he has had to adjust, to make sacrifices. But he knows he is not the only one who has had to do this; so have his friends, and their influence on one another is evidently very important to staying in, the program. "It's kind of like a family," describes Kent. "I find it easier to talk to other Bioprep students."

At his school, he says Bioprep students are perceived negatively as a group. They are labeled the "school brains" and "nerds." Other students laugh at them. But their comments do not get to Kent. He says, "They wonder why we're doing this, what we get from it...but I have to laugh. The deal is that [they're] not in the middle of it so [they] don't know what I'm getting from it."

Kent believes if you are committed then you learn to deal with the pressure and the ridicule. And while other Bioprep students may complain about the hard work and loss of electives, Kent says he knew this from the beginning; he was prepared and he knew he had to establish school as a priority.

Certainly his parents have been influential in helping him prioritize his activities. Mrs. Marshall says they have taught Kent that the way to approach life is to make it all you can and not take the easy way out. In addition, his mother has been involved in school activities as a volunteer and knows the teachers and staff at school.

Although Kent is committed to the program, there are things that concern him. For example, on a personal level, he wishes he had more time to play his horn, write another novel. As for the program, he wishes there were seven periods in the day and that there were not, as he describes, "professional jealousies among teachers of special electives pulling you every which way." Another concern, according to Kent, is that this year's freshman class has only gone on one field trip while last year's class seemed to be gone once a month.

Nevertheless, Kent is looking forward to next year and opportunities for summer enrichment programs. Beyond Bioprep, he is definitely focused on attending college. Currently, he is considering majoring in either English or genetics. His interest in genetics ignited with the Cold Spring Harbor DNA workshop earlier in the year.

Program Impact:

If Kent had not been in the Bioprep program, he believes he would not be as interested in school. Even his biology teacher thinks he would lose focus and probably retreat to his previous closed group of friends if he were not in the program.

Kent's mother says that his participation in Bioprep, especially the DNA lab and biology class, may have redirected his whole life. Besides broadening Kent's academic experiences, it has also opened up new opportunities for her daughter, who now feels comfortable culling through the research materials at university libraries. More importantly, however, Mrs. Marshall says, "Programs like this allow parents to support public education, to pull out a quality program and give their children a learning opportunity that will enable them to impact the world in a way that perhaps they never would try to make."

Analysis:

Kent Marshall came to the Bioprep program as a junior high school honors student and he has maintained high academic performance during the first year. His assimilation into the program seems to have occurred quickly, and there do not seem to be any threats to his staying in the program. All the support systems are in place; he feels challenged and that his efforts are worthwhile and will make a difference when he goes off to college. Plus, Kent's parents and at least one teacher offer encouragement and are a positive influence. The important issues in this case study are:

1. While Kent has identified two areas of interest for a college major, he did not elaborate on a specific institution or professional aspirations. To what extent will his experiences in the program help him clarify these goals?

2. Kent did not seem to be well-connected to his Bioprep classmates. What program experiences both in and out of the classroom facilitate bonding and cohesion among the freshman males?

3. Again, as in the previous case study, the student acknowledged jesting and name-calling by non-Bioprep students; however, rather than downplaying the differences between Bioprep and other programs, Kent discounted the comments as coming from students who did not know any better. It seems he feels as though he is getting something more from school than they are.

4. To what extent has the Bioprep program been integrated into the curriculum at the high school and how much do non-Bioprep teachers know about the program?

Case Study #7: Crystal Baker

Student Profile:

With two years in the Macy Bioprep program, Crystal Baker, a sophomore at a high school in Alabama, walks with a different gait, according to one of her teachers. She appears more confident, more in control than when she entered the program in the ninth grade.

At 16, Crystal shares many of the same interests as other girls her age—flipping through magazines, reading the stories, and studying the latest fads in clothes and makeup. She also likes to watch television, especially a learn-to-draw program on PBS. At school, she is active in the Future Homemakers Association, honor society, Beta club, and geometry team. She is also a member of a social club for African American female students. At her church, she sings in the choir and serves on the usher board.

Academically, Crystal is carrying a 3.2 GPA and is ranked in the top 15 percent of her class. Seven of her Bioprep classmates are in the top ten students of the class. For first semester, Crystal earned a B in chemistry, B in geometry, A in English 10, B in world history, and A in family living. She reports no absences so far this year. One Bioprep teacher remarks that Crystal has to work hard to keep her grades up. The teacher contends Crystal seems to want the questions and answers to come together in a neat little package.

Crystal lives at home with her mother, grandparents, and a younger brother who is a ninth grader in the Bioprep program. She also has an older sister in college. Mrs. Baker, a single parent, works as a cook at one of the fraternity houses on the local university campus. She was born in Alabama and finished high school. Mrs. Baker's hours are long and erratic; she says she has to work hard for the things they have as a family.

Program Entry:

Crystal and her mother learned about the Macy Bioprep program at a special meeting for parents and students during Crystal's eighth grade year. The University coordinator came out to high school to explain the program. Crystal says she had not heard of the program before this meeting. "It was a big surprise to us. We knew it was something new," she adds.

Assimilation:

Crystal says the program is difficult, but she expected this and realizes it is preparing her for courses in college. She adds that she was well-informed about the program, but she did not think the content of the courses would be that much different from the regular program.

"We had no idea these teachers were going to these training sessions. We figured [they] weren't going to know what they were doing so we expected it to be like regular classes. It was a big surprise. They started coming at us with these novels and we said, 'What is this?'" explains Crystal.

Over the last year and a half, Crystal has clearly differentiated between the Bioprep and regular classes. She says, "People don't think it's that much different. They say, 'You're taking the same thing we're taking.' But it's more involved, more in depth. We get a lot of feedback, and we get to work together more than in another class. It's a good program."

More specifically, Crystal adds that in English, they cover more literature and not as much grammar. In world history, they delve more deeply in to background information about the people and events they are studying. Not only does Crystal think they cover more and different material in her Bioprep classes, she also says the pace is faster.

She thinks the Bioprep teachers push students harder and expect more out of them. For example, she says, "They don't explain everything step by step...they give you an example or two and then the rest you have to do it on your own."

As for class discussions, Crystal thinks there was more discussion in her classes last year than this year. She also thinks there were more opportunities for one-on-one time with teachers last year. One reason for the distancing, she explains, is that the teachers may be trying to prepare them for college where there is not as much personal attention.

The difference between Bioprep and regular students, says Crystal, is that she and her classmates can "go the extra mile." Because they can handle the extra work and the faster pace, the other students look up them. Even though some of Crystal's friends who are not in the program may look up to her and her classmates, many of them did not want her to be in the program, according to one instructor. Now, however, Crystal says that most of her friends are Bioprep students and that they work together and help one another. Besides support from her peers, Crystal also sees support coming from Bioprep teachers and her mother.

Retention:

As with other sophomores and upperclassmen in the program, Crystal does not like having to give up electives. "That's the big thing with everybody," she explains, "not being able to take what they want to." She also says she and her friends have a lot of discussions about how

depressed they get, how many classes they have, and why they are in the program in the first place. Despite their grumbling, however, they encourage one another to "stick with it" because they know the program will help them achieve their goal of attending college.

One reason for this strong, positive peer influence may be that the students in Bioprep really get to know one another. Crystal comments, "Being involved with the same kids, you really get used to working with those people. You learn more and you have a chance to discuss with them because you know them. It's not like meeting a stranger and you have to start all over again..."

Teacher influence is also important. According to Crystal, she and her friends were considering getting out of the program, but their social studies teacher, whom Crystal considers a role model, intervened. "She told us it was good for us and we really needed to stay in," says Crystal. While the teachers offer encouragement in class by commenting on a student's progress, Crystal wishes that there were more opportunities for one-on-one interaction. At some schools, this desire for more personal attention might be fulfilled by the counseling staff as well as by the teachers. When asked about the role of the guidance counselors at her school, Crystal responded, "I guess we think of them as those people you come talk to when you have a bad, bad problem."

Crystal also receives encouragement from her grandparents and mother. Mrs. Baker says she knows the program is hard and she knows Crystal can do it. "I've tried to teach them they can do anything they want...," she says. She places a high value on grades and doing one's best. And she is fairly strict about her daughter's social life. She says she is not the type to let her go to every game or party. In addition to encouraging Crystal, establishing values, and setting limits, Mrs. Baker also attends parent meetings and conferences, and she knows Crystal's Bioprep friends and their parents.

Staying in the program is important to Crystal. Her mother says that Crystal likes to excel and that the Bioprep program will help her accomplish her goals. At this point, Crystal is considering attending a predominantly black University out-of-state where there are relatives closeby. And though she knows the Bioprep program prepares students for the medical field, she is thinking of a career in business or teaching.

Program Impact:

Crystal believes being in the program has made her more responsible; she knows she has to depend on herself. She thinks she has developed better study habits since being in the program and also feels she has become friendlier, more sociable by participating in the programs on the nearby university campus. She says the program has taught her that she is going to "need school to make a better person of herself," and she sees her Bioprep courses as laying the groundwork for her success. In fact, she commented on how one course builds on the other and that this helps her feel more familiar with the material.

Mrs. Baker thinks the program has had a positive impact on the family's home life. She says that even though Crystal and her brother compete with one another, they also help each other. Crystal, especially, tries to help her brother with school work. Mrs. Baker also believes the program has helped to motivate Crystal. Both Crystal and her mother are pleased with her progress. She keeps learning new things . . . new words everyday, her mother explains. If Crystal were not in the program, Mrs. Baker does not think her grades would drop, but she does believe Crystal would be very disappointed.

According to one Bioprep instructor, Crystal is a classic example of success breeding success. At first, she says, Crystal was hesitant; she was not sure she could make it. But now this teacher says she can clearly see Crystal's confidence in her face and her attitude toward people and situations.

Analysis:

From all indications, Crystal feels an integral part of the program at her school. Though she, as other students, may not like having to give up electives, this does not appear to be a real threat to her staying in the program. She seems confident she can succeed and so do her teachers and her mother.

What issues and questions, then, seem significant in this case? Knowing what to expect in terms of courses and workload were important. Even though Crystal had no prior knowledge about Bioprep, she felt she had been well-informed as she began the program. Still she did not perceive the program to be as selective as this year's freshman students do. To what extent does one's prior knowledge about the program foster a perception of selectivity among parents and students? And does the perception of selectivity become greater the longer the program has been in operation?

Negative peer pressure was an issue when Crystal decided to enter the Bioprep program; however, now, in her sophomore year it is not. She has made new friends within the program and feels comfortable with the discussions and interaction among peers and teachers. How has assimilation (in terms of identifying, bonding, and differentiating) helped to diffuse this issue for Crystal?

Mrs. Baker appears to have communicated her values with regard to school work and grades, and she restricts her daughter's social activities. Crystal knows her mother and grandparents are supportive, and she knows there are limits, expectations, and priorities. To what extent do parents help or hinder that child's ability to balance commitments and to focus clearly on schoolwork?

Case Study #8: Laura Henderson

Student Profile:

Laura Henderson, an eleventh grader, is a member of the first Bioprep class at her high school in Alabama. She's the type of person who just does not give up; if there is a way to accomplish what others may think is impossible, she will find it. And once she embarks upon a project, she will see it through to the end.

Petite, poised, well-groomed and very articulate, Laura, at seventeen, always seems prepared and organized. With her numerous commitments and interests, she has to be. She is active in the senior honor society, Beta club, and French club. She is also on the school debate team, participates in church functions, and speaks to community groups about her travels to Russia last summer. She was selected this year to serve on a special youth advisory council to explore recreational options for teens in the area. Plus, she won the science fair and social studies competition. And, in her spare time, she enjoys playing the piano.

Her academic accomplishments are just as remarkable. She currently holds a 3.96 GPA and ranks in the top 3 out of her class of 130. Laura carries a full load of courses. In the fall semester she earned an A in physics, A in advanced math, A in English 11, A in American history, A in French I, and A in debate. She says the only time she is absent is if she is participating in a debate.

According to her Bioprep biology teacher, Laura's strength is her academic talent; yet, says the teacher, her weakness could be that she has such abilities in too many areas. She sees Laura as a spokesperson in her Bioprep group. Her confidence allows her to speak her mind in discussions. And she is assertive and innovative. The instructor says Laura "will learn anything anyway she can."

In the last year, Laura's family situation has changed considerably. Her parents recently divorced. Her father lives in Montgomery where he is an electrical engineer. Laura and her younger brother, a ninth grader who is also in the program, live with their mother. Mrs. Henderson is a faculty member at the high school. Both parents were born and raised in Tuscaloosa and both attended college. Laura's ethnic background is Caucasian.

Program Entry:

While Mrs. Henderson first heard about the program from parents at another high school, Laura found out about it at a school meeting. She remembers that her advisor told her the Bioprep program would help them prepare for college and that there would be smaller classes. Since Laura planned to take advanced classes anyway, she decided she might get more teacher attention in the program. Besides hearing about it from her advisor, Laura also learned more from her biology teacher, whose son is Laura's age and in the program, too.

Mrs. Henderson thought that higher level students were selected to participate. Both she and Laura attended a slide presentation to learn more about the program. Mrs. Henderson remembers that the emphasis was on science, not just the medical field.

Assimilation:

Beyond smaller classes, the possibility for a scholarship, and better preparation for college, neither Laura nor her mother had any other expectations. And when her brother asked her what he could expect from the program, Laura told him she thought the program would be good for him if he applied himself. She knew it would interest him because he likes studying "weird things." She says, "In regular classes, he's like me...you know you just sit in there and go to sleep."

As a junior, Laura is quite adept at articulating what makes the Bioprep program different. "...in a regular class, you have some smart people and some slow. You have that in any class. With the Bioprep program, you help each other try to figure out the concept." Besides more group interaction, she also says there is more discussion in Bioprep classes. In her social studies class this year, for example, she says they discuss causes of events and students share their opinions. This emphasis on discussion is also evident in her physics class. As for assignments, Laura knows they have extra reading, but she does not think the work is necessarily harder.

Not only are the activities different, but so is the atmosphere in a Bioprep class. There is a different way the teacher relates to students. Laura sees Bioprep teachers as supportive and more understanding. In Bioprep classes, the teacher "knows we're trying to learn, that we want to learn...therefore the teacher wants to teach us, wants to let us work." In a regular class, she says you have people "who don't want to be there, who don't care to be there, and who are made to be there."

One experience that appears to have been significant to Laura in identifying with the Bioprep program was the summer camp at the University of Alabama, which she attended after her freshman year. Nightly discussions helped everyone get to know each other, she says. She still corresponds with some of the friends she made at the camp. Field trips to the university for lectures and study skills workshops also have facilitated identification and group cohesion. This semester, Laura's Bioprep class is planning a physics field trip to an amusement park to apply theories and principles learned in class to the rides.

With all of Laura's interests and commitments, it would seem that balance would have been a key issue to her assimilation. How could she do everything she wanted to? Even with a full load of courses, Laura still manages to stay activate in the debate team. Mr. and Mrs. Henderson have let Laura make her own decisions about her schedule and commitments. And evidently, she finds enough time in the day to fit in everything.

Laura did not talk a lot about friends or her social life, other than the friends she made at summer camp. Her mother said her best friend is not in the program. Though Mrs. Henderson supports Laura in whatever she chooses to do, she thinks being in the Bioprep program has hampered her social life in that she is with the same kids everyday, all day. She is pleased, however, with the smaller classes and opportunities for field trips and other enrichment activities.

Retention:

"We all know we can go to any of the Bioprep teachers and they'll help us out," says Laura. Even though Laura seems firmly rooted in the program, teacher encouragement is important. Her biology teacher, in particular plays a critical role in this support network. Laura sees her as a friend. Instead of an "I know more than you" attitude, Laura says her approach is "Here, let me help you understand."

Her parents' values also have kept Laura "on track." School has always come first in her family. She always has done her homework and made good grades because she knows this is important to her parents. In addition to establishing school as a priority, her parents also have served as positive role models and taken an interest in their children's lives. Since Mrs. Henderson works at the high school, she knows Laura's friends and teachers. She attends parent meetings most of the time. Mr. Henderson has been influential in talking to Laura about engineering and how principles she is learning in school are applicable in his work.

As for peer influence, Laura and her Bioprep classmates have established a strong support network among themselves. Teachers encourage them to work together, she says. Laura believes that most students at school have a great interest in the program; she did not mention name-calling or ridicule by non-Bioprep students as being a problem.

At present, Laura seems to be clearly focused on school. She is willing to commit the time to stay on top of her classes. On an average night, she spends between one and a half to three hours on homework and maybe even more time, if she has to prepare for several tests. She sees her Bioprep classes as being very challenging, and she knows she may have to try more than once to solve a problem or complete a laboratory assignment.

It seems that Laura's attention is more directed toward school rather than on developing any clearcut plans for her future. She knows she will go to college, but she is not sure where. She is interested in engineering but has not made a career choice yet. It seems odd, though, that a student who has as much going for her as Laura does is so undecided about tomorrow and beyond. Perhaps all her commitments in the present consume most of her energy so that there is little time for contemplation about the future.

An interesting factor about retention surfaced during the interview with Mrs. Henderson. Even though retention does not seem to be a problem at present for Laura, according to Mrs. Henderson, it has concerned other students and their parents. Some students feel they have to choose between being involved in athletics and other extracurricular activities and being in the Bioprep program. Mrs. Henderson mentioned scheduling within the six period day as a major drawback to being in the program.

Mrs. Henderson said that Bioprep parents have done a lot of talking with the parents of students who have dropped out of the program, trying to emphasize that in the long run, academic success is more important than athletics. She says she knows a lot of parents who do not have children in the Bioprep program, but who should.

Program Impact:

Laura's English teacher believes that Laura's participation in the Bioprep program has kept her more goal-oriented. It also has opened more avenues for her and given her greater exposure to a variety of experiences. The Bioprep biology instructor feels that the program has given Laura a great deal of confidence. Laura used to be very quiet and do exactly as she was supposed to, according to the teacher; now she has to be asked to be quiet.

Mrs. Henderson thinks Laura would have risen to the top even if she had not participated in the program. She thinks being in the program has provided Laura with important skills and a lot of opportunities, but she sees Laura as being self-motivated.

Laura, however, feels that if she were not in the program, she would probably become very disinterested. "I probably wouldn't care about school anymore," she comments. Not only are her classes exciting, but she also knows being in the program will help her do well in college. In physics, for example, she says they are doing college labs.

And while Mrs. Henderson sees Laura's participation as limiting her social life, Laura says being in the Bioprep program has expanded her friendships. When she attends Bioprep functions at the university, she feels comfortable

meeting new people and seeing her old friends. At school, she believes that she has formed closer friendships because she has been with the same group of students for almost three years.

Analysis:

It is not clear whether the Bioprep program is perceived to be "a cut above" the honors program or vice versa at the school. Some believe it is; others see advanced honors as being the top academic track. By the junior and senior year, classes are mixed anyway; Bioprep classes are no longer purely for Bioprep students. And because of scheduling problems, a Bioprep student may have to be in an advanced honors class rather than with his Bioprep group. What is clear, however, is that the Bioprep group is smaller and this is what probably attracted Laura to the program.

Once in the program, Laura realized the program had more to offer. The Bioprep teachers were trying different methods, encouraging more discussion and interaction. There were field trips, summer camp, workshops—experiences the honors track students perhaps did not have and experiences that expanded Laura's horizons and made her feel special and more confident.

Since Laura is a junior, it is hard to gauge what difference the Bioprep program has made. Would she have risen to the top, as her mother says? Probably, but perhaps not as high and not with the same confidence. Would she have been prepared for college? Yes, but not to the extent that she is now; her Bioprep science classes will enable her get through college courses and labs without the struggle that many other students experience. The program also has fueled her interest in science and seems likely to influence her college major and career choice.

Perhaps equally important is the difference Laura has made in the program. She has shown other students that they can be in the program and still be well-rounded. She is an energizer—constantly in motion, talking, and searching for the next challenge. As a member of the first Bioprep class at her school, she not only serves as a spokesperson but also as a role model.

Case Study #9: Leon King

Student Profile:

Last year Leon King, an African-American ninth grader in the Macy program at a New York City high school, had an attendance problem; this year he rarely misses a day of school. He is a regular in the Macy office at his high school and in the after-school tutoring session; yet, if it were not for his size, you might not even notice him.

"Leon is a very quiet individual...a big, strapping guy," says a Macy English teacher. He is very serious, very patient, and very hard on himself. He also seems more mature; he does not cut up in class and turns in his work. He is willing to work a paper over and correct the mistakes; he just keeps going, not allowing himself to be stopped, says the instructor.

While Leon may not be as be as outgoing as other Macy students, he does respond well on a more personal and individual level. His English teacher believes that Leon tends to be more retiring because he wants to, not because somebody has embarrassed him. "I think he really feels imposing so he tries to hold back," she says. Another reason may be that he "has fallen into a bunch of chatty young ladies," she adds; there are only 6 boys in her class of 25. Still, he relates well with the other students, and they respect him says the teacher.

One reason he has earned their respect might be his academic performance. At present, Leon is in the top four students of his Macy class with a 94.6 average for the fall semester. His grades include 95 in English, 93 in sequential math, 97.5 in physical science, 98 in social studies, and 93 in Spanish. At his high school, he is involved in the African-American club.

Leon and his twin sister, who is also in the Macy program, turn fifteen this summer. They live with their mother and two other sisters. His older sister attends a technical school in the city. Leon's father died some years back. He was not sure about his parents' education. His mother was born in Georgia, and English is her first language.

Program Entry:

Last year, Leon looked through the high school program directory to determine where he would apply. He wanted to attend Brooklyn Tech as his older sister had done, but his mother encouraged him to look at other schools as well. Since he was interested in the health professions, the Macy program at the high school he is currently attending caught his attention. He thought it looked interesting. Mrs. King says when Leon received the information about the Macy program, he was convinced to apply for admission. Her niece also had attended the school, so they were familiar with it.

According to Leon, his friends pressured him to go to Brooklyn Tech. "When I chose [this high school], people sort of laughed at me because...they think [it is] a school for the girls wanting to become nurses," explains Leon. Despite the pressure from his friends, Leon decided to enroll in the Macy program. His first contact was the program director, with whom he has established a positive relationship this year.

Assimilation:

With one semester behind him, Leon expects that the Macy program will make him work hard and that there will not be much time for "playing around." But he also knows the advanced courses, extra credits, and PSAT/SAT preparation will help him get into a better college and eventually get a better job.

Though Leon has a good idea of what to expect and what he can gain from the program, he does not seem to have a strong sense of identification yet. He chose not to participate in the summer orientation. "It was strange," he says, "I chickened out because they said if you're absent a certain number of days, you'll be kicked out." With the number of absences he accumulated in eighth grade, he evidently did not want to take the chance. He could not recall any one experience that has been significant so far this year, though his mother said he is looking forward to a field trip to Boston.

He also has difficulty differentiating between the Macy and the regular program at his high school. He says he has not really spoken to anyone outside of the program yet so he would not know how the classes or teachers are different. As for Macy students, Leon thinks they are special and smart. He also says Macy students are pushed harder than other students.

Up to this point, Leon seems comfortable with his Macy classmates even though he does not seem to have made friends with any one peer or group. According to Mrs. King, Leon left his friends behind to enroll in the Macy program at his high school. He likes the Macy staff and especially the program director. "If the teachers see that you're making a special effort, they will...know you, remember you. And if something came up, you would have their support," he says.

Besides feeling the support of Macy teachers and staff, Leon also finds support at home. Mrs. King says that since both Leon and his sister are in the program, they have a lot to discuss. "There's an atmosphere," she says, "We talk a

lot about it."

So far Leon has kept his family, school, and social life in balance. There do not seem to be any real pulls on his time yet. In fact, his mother feels he is more relaxed in this program than she has seen him in a while. "He just doesn't seem to get enough of it," she says. Leon says he gets most of his homework done during the afterschool study sessions since the teachers are available if he has a problem. He usually spends another hour on it once he gets home because he likes his work to be accurate and complete.

While his focus is on school, Leon knows there are equally important things. For example, he explains, "...there's the Macy program and then there's what goes on in life. I try to recognize what goes on in the life of people...I want to make myself better but I always try to make myself aware of what goes on around me."

Retention:

What will keep Leon on track in the Macy program? First, he is satisfied with his performance so far. His contact with Macy teachers and staff are providing a clearer picture of what to expect in college and beyond. For example, in English, his class is studying vocabulary prefixes and suffixes for the PSAT. In addition, Leon feels the Macy program director has confidence in him; and though he did not say so, there is the feeling that Leon would not want to disappoint him. He says the director also provides information that will help them be prepared for college.

At home, his mother not only encourages and pushes him but also tries to take part in parent meetings and conferences. She knows some of Leon's Macy classmates who live in the neighborhood and has met at least one other Macy parent. After attending the parent orientation meeting, she told Leon that he would have to work hard and be willing to cut out a few things, such as hanging around with his friends.

Leon, too, knows he can not be spending a lot of time with his old friends, some of whom he thinks are on the wrong track. "I have my own thing to do," he says, "and I have to do well..." At school, Leon sees kids who are willing to work and who are interested in going to college and making something of themselves. Leon knows if he has problems with school work one of the other Macy students would help him.

As for his future, Leon says there is no doubt about his going to college. He knows he wants to work in medicine. When he was in junior high, he was sick a lot and he watched Ben Casey. He set his sights on becoming first a doctor and then a pharmacist. Now, he is not sure. He realizes whatever professional path he chooses will probably require additional schooling beyond college, and, because of the Macy program, he says he is willing to make that commitment.

Program Impact:

Leon used to see school as "a place where they just pile you up with work...," he says. Since starting the Macy program in the fall, he has formed a more positive attitude toward school, and he has become more responsible because he has more things to do. He says he feels more prepared each day.

His English teacher says she can see Leon in the future. "I can see him doing very well as a student. He's serious yet he has a nice warm touch, a gentility...and there's a desire to be at ease. Ninth grade is such a rough time. I can picture him being a senior," she comments; and she feels he will be very comfortable with who he is.

Besides stressing the importance of a college education, the Macy program also has helped Leon see the importance of going to a good college. "If you have a good education, you [can] get a better job and you might live better than you see some people living now," he says.

Finally, being in the Macy program has helped Leon look beyond his own future. He says he wants to help other people, to help his school. He thinks that if he can get ahead, he can be a positive example for elementary school children, showing them that they, too, can succeed.

Analysis:

This case study illustrates several potential trouble spots for first-year male Macy students. The issues that seems important for Leon King regard assimilation: identification with the Macy program and as a Macy student; differentiation between Macy and the regular honors program; and making friends with other males in the program.

First, males entering the Macy program in New York and especially at Leon's high school have a double hurdle to clear. To begin with, they have to overcome the "nursing school for girls" image; and then they begin the search for a friend, a buddy, another male in the program with whom they can associate. When 70 percent of the Macy students are female, one can see that they are facing some difficult challenges.

Second, one might look at what types of experiences might promote identification, bonding, and differentiation for the typical male student in the Macy program. Experiences that might be incorporated into the first year program include:

1. Those that are unique in comparison with the regular curriculum. Experiences that definitely carry a "Macy brand" and that engage students in hands-on learning activities.

2. Those that facilitate cohesion and teamwork. Experiences that promote healthy competition and assertiveness for males and females.

3. Those that provide exposure to positive male role models. Experiences that help boys identify with professional males in health-related fields.

4. Those that enlighten students to health-related careers other than the traditional "doctor" and "nurse" occupations. Experiences that help them see the challenges and rewards of working in such fields as environmental health, medical research, public service, education, etc.

Finally, this case study again demonstrates the positive influence of parental support, encouragement, and involvement, as well the importance of establishing clear expectations and a sense of priorities and direction.

Case Study #10: Hattie Carson

Student Profile:

An eleventh grader in the Macy program at a city high school in New York, Hattie Carson talks a mile a minute. There is an urgency in her voice; it is as if there is just not enough time to say everything she wants to say. At fifteen, Hattie, who is African-American, is one of the youngest members of her Macy group. She entered the program as a tenth grader after skipping a grade, and she has been going full steam ever since.

Her Macy English teacher sees Hattie as a mature and capable student. She says Hattie is very verbal. "She comes to class prepared...willing to talk. She has read the material and responds very well to class discussions...She's able to listen. You can see the wheels turn," comments the instructor, who does not necessarily see Hattie as an intellectually gifted student but simply as one who works hard and is able to carry the Macy program load.

Hattie's strength, according to her English teacher, is that she can take an assignment, piece it together on her own, and examine it until it makes sense to her. Her problem area is writing; the instructor feels Hattie needs to work on expanding her vocabulary and organizing her ideas more coherently.

For the first semester of her junior year in the Macy program, Hattie earned a 90 in AP biology, 70 in regular chemistry, 75 American history, 87 in English, 95 in sequential math III, and 85 in Spanish. Her cumulative average is 84.8, and she ranks in the upper half of her Macy class. Her transcript shows no absences for the last two years.

Outside of classes, Hattie participates in the Key Club, a community service organization, and volunteers on Saturdays in the pediatric ward at a local hospital. She likes to swim in the summer and enjoys spending time with her friends on the weekend.

Hattie lives with her mother, who is currently attending college full-time and majoring in early childhood education. She has two older sisters. One sister attends high school and the other a community college. Neither were in an honors track program. Although there is a trace of a Spanish accent in Hattie's speech, her mother's first language is English. Neither Hattie nor her mother talked much about their home situation, and neither mentioned Hattie's father or extended family.

Program Entry:

Prior to applying to her current high school, Hattie says she knew nothing about the Macy program. After she was accepted into the Macy program, she learned from her guidance counselor that it was a program for students with an 85 average or better. Her mother received a letter from the program director, Hattie's first contact with the program, that explained the program's academic demands.

Assimilation:

Besides knowing she has to study a lot, Hattie also expects being in the Macy program will help her get accepted by a good college, such as Columbia. She believes the honor of being in the Macy program will look good on her school record.

Since entering the program, she feels college is becoming more of a reality. Through field trips and the summer program, she has visited several university campuses—New York University, Syracuse, Columbia. These experiences, Macy classes, and after school study sessions have helped Hattie identify with the program and feel part of the Macy group. She says everyone knows everyone in the Macy program. They study together; they are very close and stick together.

This closeness is one thing that sets Macy students apart for Hattie. Yet, she also sees other differences. Macy students, according to Hattie, are more "into" their work. "They always do their homework and study and get good grades on tests. The kids in the regular program don't care about nothing. All they want to do is have fun. They don't really do their work and they curse the teachers out," she says.

The Macy teachers, she believes, get to know their students better and they expect more out of them. "They are always stressing that you are in the Macy program and that you should do good," explains Hattie. In Macy classes, she adds, they cover more material, study it in more depth, do more work, and students understand the material better.

Because of the workload, achieving balance is not easy for Hattie. While her teachers may see her as prepared and well-organized for class, Hattie seems frustrated by the amount of time her school work requires. She spends about three to four hours an evening on assignments. She says she does not have enough time for herself or her friends, and her mother claims she does not have enough time for her chores at home.

Although Mrs. Carson did not articulate her support as fully and openly as other parents have, she did seem pleased with Hattie's participation in the Macy program and all that she is learning from her courses.

Retention:

At present, Hattie does not perceive any threat to her staying in the Macy program. While she may feel a lot of pressure in balancing school, social, and home responsibilities, she has made school a priority. She says she has had to give up hobbies and being with her friends to study. "You have to be into your work," she explains. "The first thing you have to do when you get home is your homework...or you'll get low averages. You don't want that because you'll be looked down upon since you're in the Macy program."

Her mother not only serves as a positive role model in being a student herself, but also offers Hattie tips about how to get the most out of her studying. Hattie says her mother's guidance has helped her through some pretty tough times.

Her teachers also provide a positive influence. Hattie knows she can go to them after school and they will help her. In addition, they offer her feedback and suggestions in their own subtle ways if she is not doing well. "They call you up and they talk to you and see if you want extra credit...they look at you—you can tell by eye contact—and they try to tell you not out loud in front of the other students to bring your mom in," she says.

The program director also helps the Macy students. "[He] got me involved in the hospital work and he talks to us about what [we] should do and gets us to know different fields," reports Hattie. In addition, her English teacher says that the Macy teachers try to work together on cross disciplinary projects and vocabulary. She thinks the students see the teachers' spirit of cooperation and realize they can go to any of the teachers for help with a problem.

While retention may not be an issue for Hattie, it is for some of her friends. In fact, more than a few have dropped out because of family problems. Hattie's English instructor says Hattie is a good friend and has helped others who may be having difficulty in the program. In fact, one Macy student, who was having problems, wrote in her journal that Hattie had invited her to come home and have dinner with her mother and her to talk over her situation.

Hattie says the Macy students are always helping each other. "We have a system, and we all work together to make the Macy system function," she explains. Their cooperation and encouragement of one another helps them deal more positively with the ridicule they often hear from non-Macy students. "Nerds" is term commonly used to refer to Macy students says Hattie, who considers herself a level above the non-Macy students.

As for the future, Hattie plans on attending college. She knows her 85 average may limit her choices, and she is not satisfied with grades so far. She thinks she can do better, and so does her mother.

Program Impact:

As a result of the Macy program, Hattie thinks she has changed in several ways. First, she says she has had to change her schedule; before she entered Macy she had a lot of free time and nothing to really study. Now, she has little free time because of her homework. Yet both she and her mother say she has learned a lot more since being in the program. In addition, Hattie says she can relate to people much better. Before the Macy program, she considered herself shy, but the support of her classmates and teachers has helped her to "open up". Her English teacher adds that the Macy program has given Hattie confidence and a vision of her future.

If Hattie were not in the program, the instructor thinks Hattie would still float to the top. "...She would be fine. I don't think it would be detrimental. She's a survivor...but she would lose a lot--she'd lose part of the edge," the teacher says. Her mother thinks that even if Hattie were not in the program, she would still be attending the same high school, however, she would not know as much. Mrs. Carson feels the Macy program will help her be more advanced and develop important study skills. And, she says, Hattie has been an inspiration to her, keeping her on track with her own studies.

Finally, besides having a positive impact on her and her mother, Hattie's participation in Macy also has been noticed by the younger children in her neighborhood. She says, "They ask me why I'm always studying and I tell them if you want to do good in society, you have to study."

Analysis:

Hattie Carson appears to be another Macy student who, at least according to one source, probably would have risen to the top even if she had not been in the program. But would she? Hattie certainly is not at the top of her class now; perhaps, however, if she had not been in the Macy program her grades and class ranking would have been higher because of what is perceived to be easier courses and inflated grading.

The programs appears to have had a very positive impact on Hattie. She is challenged academically. She has established education as a priority. She sees college and a career in her future. She has become more social. She has acquired knowledge and study skills in areas she probably would not have if she had been in the regular program.

But, Hattie also is experiencing a lot of stress. This was evident not only in her comments about wanting more time for herself, her friends, and other interests, but also in her voice. For example, a section from the interview transcript reveals her anxiety:

Interviewer: "Suppose you were not in the Macy program?"

Hattie: "I feel that I would be at ease. The pressure wouldn't be that great. [pause, then a sigh] I wouldn't have as much problems. [rate of speech quickens] but I don't want to get out of the Macy program because I know that's going to look good on my record..."

This was not the only comment about feeling stress. Even Hattie's mother mentioned that "she had been complaining recently" and getting up in the middle of the night.

The following questions, then, seem pertinent:

1. What is the role of the guidance counselor in the Macy program? Hattie mentioned counselors only once and then only in the context that she had not gone to them yet.
2. What is the relationship between teachers and students and what are the messages teachers are giving students about being in the Macy program? Hattie continued to emphasize that they push her to do well and that they have high expectations.
3. What messages are the students giving to one another about being in the Macy program? Failure or poor grades was not an option according to Hattie. She did not want to be looked down upon.
4. What strategies are being presented to the students to help them deal with stress and anxiety, not just at school but at home, too? Do the students feel they have a forum for talking about such issues?
5. To what extent is such anxiety felt by other students at Hattie's school and in Macy programs at other schools?

Case Study #11: Marissa Crofts

Student Profile:

If school were open twenty-four hours a day, Marissa Crofts would probably be there. An eleventh grade African American student in the Macy program at a high school in New York, Marissa calls school her "second home." She is usually out of the house by 7:00 a.m., and she may not return home until 5:30 or 6:00 p.m. As a peer tutor and Macy student assistant, she organizes her life around the Macy program and schoolwork, which some nights she does not finish until 1:00 a.m.

Her Macy biology teacher describes Marissa as determined and not easily discouraged. "She's willing to work hard, persevere...she wants to do homework thoroughly, not just a cursory job like some of the others," he says. He adds that Marissa works harder when she is not satisfied with her level of achievement. "She is a bit of an overachiever," he says. What surprises him is that academically she is doing better, even though the subjects are harder.

Marissa is in the top 20 percent of her class at her school. She carries an 89.8 average. Her grades for fall semester include a 95 in English, 95 in sequential math II, 85 in biology, 75 in global history, and 91 in Spanish. She also completed a group science project, earning an honorable mention and a score of 92 for one credit. This year, she has been absent one day.

Even with her responsibilities as a Macy student, tutor, and assistant, she still finds time to take part in school clubs. This year she has been a member of the Spanish and art clubs, and she plans to join the math club. Swimming, biking, and drawing are other pursuits Marissa enjoys when she can find the time.

Relationships with other students and teachers appear to come easily for Marissa. Friendly, helpful, she relates well with others says her biology teacher. She is a "take charge" person.

Marissa's homelife seems stable. She lives with her mother and a younger sister. Mrs. Crofts is a home care aid. Born in Jamaica, she speaks English as a primary language. She completed the eleventh grade. No mention was made of Marissa's father or of other family, except for Mrs. Croft's sister and niece, who attend the same high school.

Program Entry:

Marissa relates the following story about getting in the Macy program. "The first day of summer school, my mother came along with my aunt and my cousin and she asked, 'What is the Macy program? I don't understand why my child is going to summer school.'" In response to Mrs. Croft's question, Marissa says the program director explained that Macy was the honors program at the high school. She remembers he told them, "Your child has to maintain an 85 average, study hard, very hard, because we're trying to get them into a very good college." He also said that Marissa would take several math and science courses.

Neither Marissa nor Mrs. Crofts had any knowledge about the program before that time. Marissa says she thought that she had been recommended in junior high school. As soon as she got to high school, her counselor told her about the Macy program and she was again told, "That's the honors program where you have to maintain an 85 average."

"Eighty-five" seems to be the magical number for Marissa. She has maintained at least that since entering in the ninth grade and has not found the program to be that hard.

Assimilation:

"In the beginning," says Marissa, "I didn't expect anything. But I think I [have gotten] more out of it than what they expected." From that first day, when she learned about the expectations of keeping up an 85 average and taking extra science and math classes, she knew she would have to buckle down and study hard. Today she says she would tell students interested in the program that they do not necessarily have to be a "good, good student but a student who is really serious about [his] work." Clearly, Marissa's initial sense of expectations focused on what was expected of her as a student rather than on what she could gain from the program.

Besides focusing on teacher expectations, Marissa has identified with the Macy program in other ways. She believes the Macy staff tries to expose students to new aspects of life and then to help them see that these experiences are just the beginning—there are lots more ahead. Her summer school experience included several field trips; for example they went to a Broadway play and also to hear a performer from CATS talk about being an actor. Plus, last term everyone in her class had to give a speech. She said they were "all in the same boat...so scared!"

While special Macy activities provide a base of contrast for Marissa, she sees more differences in Macy classes, students and teachers. For example, there is more discussion in Macy classes, she says. Also, teachers take the time to explain every step. "They will ask you a question to make sure you understand. If there is one student who does not understand, the whole class works together like a family to help him understand," she explains.

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In other classes, Marissa says students "run around," but in Macy classes they want to learn because they are really interested. Macy students also receive extra preparation for tests such as the Regents and SAT, according to Marissa. She mentioned, in particular, extra vocabulary work in English. As far as Marissa is concerned, if there are teachers being paid to help them, the students should try to get the most out of the program.

For Marissa, the issue of balance is not an external matter where she is trying to juggle school, family, and social commitments; it is more of an internal matter—how to balance her commitments within the Macy program. This is not surprising since she spends the majority of her day at school and then most of the evening on homework. While initially she had to learn how to study, now the challenge is what to study. With three or four tests on some days, she has to pace herself to keep on top of the material rather than trying to cram all of her studying into one night. She admits she would like to have more of a social life, but for now her focus is on school.

Mrs. Crofts is supportive of her daughter's commitment to school. "My mother thinks it's good for me. She really admires me for taking my time and studying," says Marissa. She also sees her teachers as supportive. "All the teachers I have right now know me as Marissa...and right now I could talk to any teacher. They're there for me not just as a teacher but as a counselor," she explains.

Retention:

Teachers appear to play an important role in retention as well as in assimilation. Students, as Marissa demonstrates, want to feel that they are known and recognized. In the Macy program, one reason teachers can offer support and develop a more personal relationship, explains Marissa's biology teacher, is that they have more time. Class enrollments are smaller than regular classes, and teachers are able to devote more attention to working with students one-on-one and ensuring that they understand the material.

Marissa says the average for her Macy classes is 25 students. Sometimes, in upper classes there are even fewer students, reports a Macy English teacher. In addition, at Marissa's school, Macy teachers are usually available to help during the after-school study session.

In the Macy program, Marissa says, "Teachers can really be friends...[they're] here to talk to you..." She sees the Macy teachers as not only providing information about subjects such as science and math, but also sharing what they have learned from their own experiences—from their teenage years.

While Marissa says she is not one to pattern herself after a role model, she does admire the Macy program director. "His views on some things really surprise me...he would never let you know he's upset," she says. She sees him as a father figure and believes that he would provide advice or anything else she might need.

For Marissa, retention is also very closely linked to the closeness she feels exists among Macy students. "I don't really have any friends who aren't in the Macy program," says Marissa. She adds, "[Macy students are] never jealous with one another. We're always trying to promote the other person to get a higher grade...We all know who's at the bottom and top. We try to help one another." She feels this encouragement does not exist in other classes where students "compete and cut up" one another.

And it is the students in her regular classes, such as physical education, who chide Macy students for being "goody goody" and "stuck up," says Marissa. "They really don't like people from the Macy program," she contends. "It comes from the wrong idea of what the Macy program is all about," Marissa adds.

Marissa says she tries not to act that way, but she also admits any friends she has must adjust to her and her commitment to studying. Her priorities are firmly established. She explains, for instance, "I have to narrow down the free time I have. I have to learn that you can't do this or that because you have to study...you cannot have too many things."

Her mother supports Marissa's sense of priorities. She told Marissa that if she wants something she has to go after it. While she may not know many of Marissa's friends in Macy, she does try to attend parent conferences. She seems very close to Marissa and encourages her to do her best.

Today, Marissa is meeting the challenges of the Macy program. Tomorrow, she hopes to be a neurosurgeon. In fact, she can even see herself wearing a physician's white robe and hear her name being called, "Dr. Crofts..."

As for college, she is considering Xavier University because she learned that 90 percent or more of their pre-medical students go on to medical school.

Program Impact:

As a junior high student, Marissa says she would go home from school, watch television, and forget about her homework until the last minute. "I didn't really take studying and my classes seriously," she says. "It was just something I had to do." Academically, she has made an about face. The change began with summer school when she said she started studying right away. That session prior to beginning ninth grade gave her a jump on everything she says.

Not only has she learned how to study; she has also learned not to quit since being in the Macy program. "Always go for it," she advises, "because there's always a turning point.

The Macy program has affected her attitude toward school and life. Marissa believes the Macy program has opened new doors for her, given her new knowledge. "Extra classes in English, science, and math really made me want to go to school further...in biology I would love to invent something," she offers.

Mrs. Crofts believes the Macy program has given Marissa a lot of opportunities. According to her, Marissa "probably wouldn't be doing as well, applying herself, and trying as hard," if she weren't in the program. "It has expanded her outlook," adds her mother.

According to her Macy biology teacher, Marissa would probably still be in honors classes if she were not in the Macy program, and she would still get good grades. But, he says, her aspirations and goals might not be as strong, and she might have turned off to school.

Analysis:

This case study prompts a closer look at two phases of the Macy program: entry and assimilation. Specifically, the issues seem to be the following:

1. prior knowledge to entering the program

2. expectations as a factor of assimilation

Neither Marissa nor her mother say they had any prior knowledge of the Macy program. Neither knew why Marissa had been selected. It appears there was no attention-getter, such as a parent's orientation program or letter explaining the selection process or nature of the program. Nor had they heard "through the grapevine" from other students and parents about the program; so, peer influence did not seem to be a factor in Marissa's entry either. Marissa, accompanied by her mother and aunt, simply showed up for summer school wanting to know why she had to attend; it almost seems as if Mrs. Crofts might have thought the program was to give remedial help to students.

The following questions seem pertinent in this case:

1. Is this lack of information prior to entry specific to just Marissa's case? To the Macy program at her school?

2. What role does prior knowledge play in a student's assimilation in the program?

3. What might be some avenues for informing students and parents about the program prior to entry?

Once in the program, Marissa kept receiving the same message—Macy is an honors program and you have to maintain an 85 average. The emphasis was on what was expected of her, not what she could expect from the program. Her focus was not on being better prepared for college or the lure of meaningful experiences—instead she dove head first into studying, maintaining that 85 average, striving for 90's and above on tests. Again, it's important to ask if this emphasis on grades and study expectations is specific to Marissa's case? Still other questions that seem relevant are:

1. What messages are the students getting about expectations and grades? Are these messages consistent from teacher to teacher, class to class?

2. What kind of pressures does this emphasis on grades put on students? Marissa seems to thrive on the pressure, but what about other students? Is equal emphasis put on the importance of doing well for other reasons, such as learning the material for personal satisfaction, practical application, and preparation for future endeavors?

Case Study #12: Christina Olivari

Student Profile:

Christina Olivari, an Hispanic twelfth grade student in the Macy program at a city high school in New York, is not one to mince words. She says what she thinks and she says it with confidence. Though she entered the program as a tenth grader, a year later than most students, she has formed clear ideas about what she expected and what she found, as well as what she likes and what she does not like.

As of the first semester of her senior year, Christina held a 98.6 grade average and was ranked in the top ten of her class of over 500. In Advanced Placement (AP) English she earned a 92, AP calculus 85, government 90, and Latin 95. Her senior course load is light; a look at her previous grades in science provide a clearer picture of her high level of academic performance: 85 in physics, 99 in anatomy and physiology, 90 and 94 in AP biology, 97 and 93 in chemistry. Christina's transcript shows 3 absences in the first semester, 8 last year, and 12 in her sophomore year.

A Macy English teacher says Christina is very conscientious; she perseveres. "She isn't my most gifted student, but she's doing very well because she's learned how to study and how to organize," says the teacher. In her AP English class, Christina has become a stronger student and her writing has become more organized.

She relates well with others and has lots of friends, according to the English instructor. At present, Christina is trying to help a Macy classmate who is "falling apart," recounts the teacher.

At home, Christina is the youngest of eight siblings—five sisters and two brothers. According to the English teacher, the older siblings have pursued careers in law and medicine. Christina's parents are divorced. She lives with her father, who is retired. Christina says he was born in San Juan; and though Spanish is his first language, he speaks English. Her mother, she says, speaks only Spanish.

Program Entry:

The reason Christina entered the Macy program as a sophomore is not clear; she wishes, however that she had started the program in ninth grade. "Other students," she says, "should have a chance to see the difference like I did."

Assimilation:

From what Christina had heard from other students, she expected the program to be very difficult. "Everyone said it was going to be so hard you would be crying...you would get 4 tests a day," she says. Some students, she claims, even advise others not to get in the Macy program because it is so tough.

Once in the program, Christina was surprised. It was not so difficult. "Sometimes, I get 5 tests a day and I get 90's on all of them," she says. Though Christina did not talk about the challenges of juggling academic and other commitments, she has evidently learned how to balance the demands of Macy courses as well as those activities outside of school.

Christina also expected the Macy students to be different. "I thought it was mostly competitive and nobody cared much about each other," she explains. Instead, she found her classmates to be supportive. "It is different," she says, "We compete but we help each other."

She also says her father has been supportive. Both her English teacher and the program director share Christina's perception of her father. Mr. Olivari is evidently a familiar face to the Macy staff.

Retention:

Christina's comments about teacher influence are surprising. While other students may feel a special bond with the program director, and he may be a key link in their staying in the Macy program, Christina has quite a different opinion. She says neither she nor her father care for him. "He's very heavy...hard to get along with...," she states. Evidently, his jesting and occasional sarcasm does not appeal to Christina, who, as the English teacher describes, is a very traditional student.

Instead of going to the director with her questions and concerns, she goes to a Macy guidance counselor, and other Macy staff. In fact, she says, "I wish I had more time with [the counselor]; I wish there were more guidance counselors." According to Christina, the two Macy counselors have offered a lot of support to seniors this year as they have worried about college acceptances. She adds that one thing she will always remember about the program is the people because "they were always there [for the students]."

Christina had to make some serious choices about her social life and priorities. She says, "I made a lot of friends in ninth grade and I lost them because they thought I was a snob when I got into the program. I'd say 'Hi' and they ignored me. I didn't change. They changed. They became prejudiced against me because I was in the Macy program."

Though teachers and staff say that Macy is an honors program, Christina says some non-Macy students have a different idea of the program. "One girl," explains Christina, "said Macy students are not smarter; they're dumber. She means we're made to seem smarter but we're not." Christina thinks most of the non-Macy students are jealous.

As for establishing her priorities, Christina believes one of the tradeoffs for being in the Macy program is that you have to give up a lot of free time. "Everybody else gets home from school and they go up to their computer games or go outside and hang around. But you can't do that if you want to get good grades in the Macy program. You have to go home and study and do your homework—not just write the answers down—you have to study and review," she says.

Because Christina is determined and directed, she did not perceive any threats to her staying in Macy. She says, "When I get into something, I like to finish it...and make it perfect."

Program Impact:

While her English teacher thinks Christina probably would have been fine and could have been able to succeed in a larger program, Christina believes her efforts in the Macy program have paid off. She already has been accepted to several colleges and offered a scholarship at her first choice institution. Plus, she says she has received a lot of recognition.

Analysis:

This picture of Christina offers more insight into peer influence during entry, assimilation, and retention. Negative peer influence is evident at each stage. Students advise others not to get into the Macy program because it is so hard. Once in the program, a student usually experiences a break with his non-Macy friends. And even though he may be firmly established in the program, he may still have to endure some ridicule and put-downs that come with being in the program. It seems fairly clear that bonding with other Macy students is an important issue during assimilation.

This case study also provides another glimpse at a student who may not be "intellectually gifted," as described by her teachers, but who succeeds because she devotes a lot of effort and time. Also, she possesses an inner drive and desire, she enjoys a challenge, she had a positive network of support among staff, peers, and a parent, and she was willing to establish her academic work as a priority.

Case Study #13: Stanley Tedder

Student Profile:

"When I was in junior high school, my social life was at a roaring high," says Stanley Tedder, an African American Macy student in the tenth grade at a high school in New York City. Stan describes himself as a sensible, flirtatious, and pretty fun guy. "When I get crazy, just watch out because I'm pretty funky," he warns.

A Macy English teacher characterizes Stan as spontaneous and creative, especially when he is working on the school newspaper. According to the instructor, Stan is an unusual student who seems just on the verge of blossoming. "There is a quickness and brightness...he is not afraid of me...he won't hesitate to ask questions," she says.

Yet, she also admits that Stan has not quite outgrown the social immaturity that she witnessed last year. She says he contributes to class discussions in an intelligent manner and that he seems well-motivated like his peers, but he just is not as focused as he could be.

His academic record for the first semester this year indicates Stan has had a tough time settling down. His grade average is a 77.4. For fall term, he earned an 82 in honors chemistry, 76 in honors English, 81 in sequential math, 75 in global studies, 80 in Spanish, and 70 in MARC, an honors science research course for minority students. Four of his teachers commented on his report card that he "has the ability to do better." So far this year, Stan reports he has missed 8 days of school because of illness.

Stan's extracurricular activities and outside interests are numerous. Besides being a member of the school newspaper staff, he also serves on the library squad, health clinic committee, and the special effects committee for "Showtime at the Apollo." He is a peer tutor and was a participant in the Manhattan Borough Science Fair in March, 1989. He is also the teacher's pet, he claims.

Stan often spends Saturdays in a career awareness program, is active in the Boy Scouts, and takes part in community service projects. He used to volunteer in a nursing home. To improve his financial situation, Stan says he sometimes distributes fliers.

His mother, Mrs. Tedder, says Stan reads a lot and always has been interested in science. Since the death of his father almost two years ago, she says Stan's interest in medicine has become stronger. Stan spent a lot of time with his father and the other patients at Columbia's neurological center. "He became very involved and interested in them and their treatment. He talked to quite a few of them," she explains.

Stan, who is 15, lives at home with his mother and younger sister in Brooklyn. He also has two older sisters who are not at home. Mrs. Tedder currently is working on an advanced degree in accounting. She works for the New York Housing Authority. His mother was born in New York and speaks English as a first language. Stan's home life seems stable.

Program Entry:

Stan did not share details about the selection process and application. However, he says he knew about the Macy program in junior high school. As an eighth grader, Stan already had some friends in the program who had prepared him for the challenge. He knew the program was medically related and that he would have to take more science and math courses. Because he was interested in medicine, he compared the curricula at different schools, says Mrs. Tedder.

Stan believes that while some students learn about the program as he did, most find out about it at orientation in their freshman year. According to Stan, some get the wrong impression. "I mean they know about it, that they have all this fun, but they don't know they have to work," he explains.

Assimilation:

As a second year student, Stan expects the extra science and math courses to prepare him for the medical profession. He also hopes to take college classes later in high school, and he thinks that being a Macy graduate may give him a better chance at being accepted by an ivy league school, such as Harvard or Yale.

So far, the program has been what Stan expected, and perhaps a bit more. "When I came here people said, 'Oh, you'll have to do a little work,' offers Stan, "but I have to do a lot of work..." He says he would advise new students that the Macy program is fun, but it is not easy.

Stan likes being in the Macy program. The harder honors classes have provided a sense of identity. In addition, he is planning to attend CAMPSTAR this summer, which will also foster a positive identification with the program and other Macy students.

His MARC class and many of the activities and clubs he is in are primarily made up of Macy students. Not only has this facilitated his identification, but it also has provided an opportunity to make friends. Stan explains, "Before, I made many friends but now I [have] made friends that I can actually talk about anything, even like friends I can trust my life with. Before I had maybe two friends I could trust my life with, but here everybody I know I can trust."

He adds, "There's a bond that's built...and those bonds got even tighter. When I came here as a freshman, I was like, 'I really don't want to be here,' but there was a bond that was formed and I doubt that bond will be broken until graduation day..."

Stan describes the bond as existing among himself, teachers, and other students. He says, "It seems that over the last two years, the program and I have meshed together and are like inseparable." Stan wishes he could take a picture of his school with the sun behind it so he could remember it and what his experiences mean to him.

To Stan, school not only means friends, it also means hard work. One of the differences between Macy classes and other classes is that teachers cover material in more detail. Last year, Stan took advanced math, a course for Macy and honors students. He says, "It [was] hard compared to my friends' [class]. We [were] going into in depth. You actually had to know your stuff." This year Stan is taking regular math and he says it is slower. Another difference Stan has noticed is in the students. Macy students will most likely be hunchbacked because they are always carrying all their books, he claims.

As for the teachers, he thinks they demand more of their students. "They're more inclined to push, make you go beyond your limits, whereas other teachers say, 'Well, you look okay so I give you a 90 and you slide by,' explains Stan. He adds, "But the Macy teachers push you more...if you have an 80 average, they want you to get a 90 average." Stan also believes there is more interaction between Macy students and their teachers. "Everybody talks with their teachers," he says, "but Macy teachers talk a little bit more with their students."

For Stan, balancing the demands of school work and his social life are presenting some real problems. Mrs. Tedder thinks Stan is not studying as much as he should be. "He thinks he can turn it off and on," she says. At home, Stan says he works on his homework from 7:00 to 9:00 p.m.; then he watches television or gets on the phone until about 10:30. Mrs. Tedder, however, says Stan has gotten into a habit that is hard to break: he tends to put his phone time before homework.

Even though Mrs. Tedder thinks Stan is not getting all he could out of the program, she is still very supportive of his participation. She says the opportunity to do independent research has really helped him.

Retention:

Stan says his mother has encouraged him during the tough times, especially last year. "When I used to come home and say, 'I can't take it any more,' my mother would say, 'Sit down, please do your homework,' so I got through pretty good. I know some people who went pretty wacko the freshman year," says Stan. Mrs. Tedder attends parent conferences and PTA meetings when she can; and, from carpooling to different activities, she has met Stan's friends and some of their parents. She says she keeps stressing the importance of hard work and good grades.

Teacher influence also has been positive. Mrs. Tedder mentioned that Stan's MARC teacher had called to say Stan was not getting full benefit out of his course. Though his English teacher has not had a reason to talk with Stan's mother yet, she said she also does a fair amount of calling parents at home. Stan sees both his sophomore and freshman English teachers as role models. He says that although his tenth grade instructor may be "little nutty," she lets him know if he is "messing up" and she always pushes him to do better.

According to his Macy English instructor, the influence of other Macy students has had a positive effect on Stan. "He travels with peers who are education-oriented and whose parents are supportive," she says. Traditionally, the Macy program draws students who are well-motivated, have good attendance, do their work on time, and are enthusiastic, she says.

While Stan talked about he the special bond that exists among Macy students, he did not mention working with his Macy classmates in group study sessions or on other projects. Nor did he talk about negative peer influence from those outside the program. For example, he did not mention Macy students, in general, being chided or ridiculed; he did report, however, that students in the MARC class were called "nerds." He did not know why, and, evidently, the name-calling does not bother him. He said the class is fun and interesting, and he likes the privileges that go along with being a MARC student.

Whether or not Stan has established schoolwork as a priority is still a mystery. His performance in the MARC class has been borderline. According to the grade report, Stan did not complete a required project in the first semester. He also seems to be struggling in other classes. While Stan claims he spends most of his time studying, his mother says he does not apply himself as much as he could and he is not putting in the time he needs to get good grades.

Perhaps Stan is at a turning point. He wants to do better; in fact, he has a bet with a friend that he can earn a 93 average—maybe not this year, but eventually. He also knows he wants to go to college and on to medical school to become a doctor. He says, "Ever since I was in the sixth grade, I made a speech and said I would either like to be President of the United States, a doctor, or a lawyer." At this point, Stan has decided to become a pediatrician.

Program Impact:

Stan's participation in the Macy program has changed his outlook on school and his future. Before he came to high school, he thought school was "square." He says, "In

eighth grade, I hated school. I came to Macy and school's fun. After that, I mean I had fun classes...I wanted to come to school. I looked forward to getting up in the morning..."

The Macy program, it seems, has given Stan hope. "Before, I was very pessimistic. [I thought] well this can't happen or that can't cause I'm not pushing myself. I'm not doing what I'm supposed to. But then when I came to the medical program, I said, 'Wait a minute, I can do this so then I started and I'm doing it now. I like the Macy program," he adds.

Stan also believes the Macy program has helped him change his behavior. "Before I was always crazy, always active...but now I'm calmed down compared to what I was in eighth grade," he explains. Stan sees the Macy program as acting as a "reverse catalyst."

According to Stan, he no longer has much of a social life. He goes to very few movies. This curtailing of activities, however, is probably to his benefit; his mother thinks he does not "need to be dealing with everything out there anyway," says Stan. And besides, through Macy he says he has met more girls..."There are three girls for every guy—not too bad odds," he says.

If Stan had not been in the Macy program , he thinks he would not be the person he is now. "I'd probably be wearing gold chains, which I do not like,...doing drugs, which is not my style," he explains. "Here, I'm calm, cool, quite tranquil compared to what I could be in various scenarios."

Mrs. Tedder also believes Stan has benefited from the program. "He seems more aware of a lot of things going on in medicine. He grasps things easier," she comments. His English teacher thinks the Macy program has had a calming influence on Stan. She said she was quite strict last year and often had to talk to him about his behavior during homeroom.

Besides having an effect on his behavior and outlook, Stan also feels being in the Macy program can positively influence his future. He sees the payoff for being in the program as a chance to go to an ivy league school and then on to medical school; and he looks on down the road to even bigger things, such as "earning nice money, driving around in [his] Porsche, and [being] very satisfied."

Analysis:

Stan Tedder, perhaps more than other Macy students, illustrates the concept of assimilation. In his comments about establishing relationships with other students and teachers, he actually uses the terms "bonding" and "meshing." School, to Stan, is no longer square, something he dreads; it has become something he looks forward to, a place where he has friends and a purpose. He feels a part of a group; he feels he belongs.

A second concept that seems relevant to Stan's case is retention and, more specifically, prioritizing. The last two years have helped Stan feel very good about school; they have changed his perceptions about the present and the future. So far, the experiences and relationships he has encountered in Macy have enabled him to put school ahead of other activities.

While Stan likes school and truly enjoys all the activities and privileges school offers him at the moment, he has not made a commitment to the hard work and academic excellence that is expected of Macy students and that will be required to fulfill his future goals of going to college and becoming a doctor.

Neither Stan nor his mother are pleased with his performance so far. Stan wants to do better, and Mrs. Tedder knows he can and must do better. Perhaps, as his Macy English teacher suggests, Stan is just on the verge of blossoming, just on the brink of establishing his school work as a priority.

Case Study #14: Anita Peterson

Student Profile:

Anita Peterson, an eleventh grader in the Macy program at a high school in New York City, may appear quiet and reserved at first, but she does not let her shyness get in the way of seeking new experiences and making new friends.

As an only child, Anita seems independent and well-rounded. She enjoys swimming, dancing, and singing. At school, she has participated in a variety of activities, including the Science Olympiad and Club Med. She is also a member of ARISTA, the school's honor society, and serves as a math office aide to assist with copying and errands. On Saturdays, Anita attends a career awareness program and currently she is taking a SAT preparatory course; both classes are offered on city college campuses. For the past two summers, she has taken advantage of programs at two in-state universities.

Anita's math teacher describes her as being very conscientious. He says she completes all her assignments and contributes to class discussions. Her performance on tests varies, he says. Overall, he considers her slightly above average in her ability. Mixed reports come from other teachers. Most offered positive comments on her recent grade report; her bacteriology instructor indicated she had a special aptitude for the subject. Only her physics teacher commented she had the ability to do better.

For the first semester, Anita earned an 82 in sequential math VII, 81 in honors physics, 86 in bacteriology, 95 in honors English, 80 in U.S. History, and 95 in Spanish. Her average is 84.7. Two absences were recorded on her first semester grade report.

Anita, who is an African-American, turned 16 last December. She lives with her mother, and each day has at least a 45 minute train ride to her high school. Mrs. Peterson works for a municipal housing authority. She has a Bachelors degree. Born in the West Indies, Mrs. Peterson speaks English as a first language. There was no mention of Anita's father.

Program Entry:

Anita learned about the Macy program in junior high school from another student. She found more information in the high school directory. She originally applied to another Macy school other than the one she is attending; she was accepted only at her current school. Mrs. Peterson was concerned about the long train ride, but she knew Anita was interested in medicine. She said she talked to other parents about the Macy program before Anita entered the program.

Assimilation:

When she first entered the Macy program , Anita said she did not know what to expect. She had heard that Macy students at another school were involved in hospital work and thought there might be a similar opportunity at her high school. She later found out that while Macy students at her school are encouraged and even expected to participate in community service work, they do it on their own. Anita also says she did not expect as many extracurricular opportunities or that people would be willing to give up their time to work with students on Saturdays.

Her participation in Macy activities appears to have strengthened her identity as a Macy student. Through Macy classes and summer camp experiences, she has made new friends, and Mrs. Peterson says she corresponds with many of them. In addition, she is taking advanced science courses, such as genetics and bacteriology, which also foster identification with the program.

Anita sees a big difference in the way other classes and her Macy classes are structured. She says her Macy bacteriology teacher "doesn't really tell you things. He wants you to ask him and then he'll talk about it...you find out about it...he just gets you started." Not only do Macy teachers expect students to work more independently, they also allow students to challenge them says Anita. And while teachers may give regular students an extra push, she says, they know Macy students will do the work because they want to succeed.

At present, Anita seems to have everything in control. She said in ninth grade she ran track, but her mother told her she had to drop off the team because her grades were falling. Although she does have friends outside of Macy, she claims she does not have much of a social life. Most of her weekends are spent attending school-related programs and activities.

Mrs. Peterson supports her involvement. She admits she would rather have Anita participating in various programs than staying at home and just "hanging around." Anita also finds support in the Macy staff and teachers. She says most of her teachers know her and are willing to help if she has a problem.

Retention:

For Anita, retention does not seem to be an issue. "I enjoy doing the work and it's challenging, most of it," she says. She thinks she is doing fairly well compared to other students, whom she says do not always work up to their potential. Anita, on the other hand, is willing to put in the extra time it takes to really understand the material and

then to be able to apply what she has learned. Because she wants to become a doctor, her science and math courses are especially relevant and important to her. It is evident that Anita considers school a priority.

Besides offering support and encouraging Anita to become involved in activities, Mrs. Peterson also helps Anita by setting standards and limits. "I have always stressed education and exposed her to a lot of things, not just everyday things," she says. Plus, she has emphasized that she expects Anita to go beyond high school, to get a college degree, and be the best that she can be.

The message seems clear to Anita. "...She [her mother] knows I have the potential...if I say I can't do it she says that's nonsense...," Anita explains. In addition, Mrs. Peterson ensures that there are no distractions when Anita does her school work. "I get on her a lot," says Mrs. Peterson, "I don't let her watch TV. I turn off the phone so she can concentrate. I make it so she's able to study at night."

Macy teachers and staff also keep Anita on track. For example, her guidance counselor advised her to relax after she gets home in the evening rather than jumping right into her studies. According to Mrs. Peterson, Anita speaks very favorably of her teachers. And the school principal's "no nonsense" but "caring" approach is much appreciated by Anita's mother.

Although Anita has friends outside of the program, they do not chide her for being in the Macy program. Most of the time, says Anita, they do not even talk about school. Occasionally, however, she does talk about her three-hour labs, SAT preparation, and experiences at summer programs. As for her friends in the Macy program, Anita feels that they offer help when she really needs it. The seniors, she says, encourage her to try harder. While there are non-Macy students who call her a "nerd," this does not seem to bother Anita.

Instead, her focus is on her future. She is considering two out-of-state universities. As for a career, she has thought about dentistry and even teaching, since she loves science and would like to help students who do not do so well in the subject. For now, however, she thinks she wants to be a psychiatrist and practice in New York.

Program Impact:

Mrs. Peterson feels the program has given her daughter a good background in science and math and that it has prepared her well academically. She also says that, through the Macy program, Anita has been with children who have the same educational goals, children who are college-minded, and that this has kept Anita focused.

Though Anita thinks she would have sought out extra science courses even if she had not been in the Macy program, she says the Macy program has brought her closer to what she wants to become. "If I had not been in the program, I wouldn't have had the experience to see what it is like to be a doctor...the hardships they go through...," she explains. The Macy program has broadened her horizons and directed her toward activities that will help her achieve her future goals.

Analysis:

Anita Peterson has strong parent support. She perceives the Macy teachers and staff in a positive light. Her Macy friends are supportive, and she does not perceive friendships with or comments by non-Macy students to be a threat. In addition, she has had a number of experiences that have nurtured her identification with the program and forged new friendships.

Here is a student who, according to at least one teacher, demonstrates a special aptitude in science and, in particular, a medically-related science. Participation in the Macy program has provided her with direction and clarity about college and career goals. Through advanced classes and other Macy activities, this student has become not only more focused in her educational and professional goals, but also better prepared to achieve these goals.

Case Study #15: Jose Guerrero

Student Profile:

To his friends, Jose Guerrero, a twelfth grade Macy student at a New York City high school, is probably pretty tough to figure out. Even he admits so. "A lot of people can't picture me," he claims, "I always joke around. I'm very friendly. I'm interested in sports, always working, and then somehow, I always get good grades and they wonder how I do it."

At school, Jose plays baseball and basketball. He is in the National Honor Society. After school, he works as a messenger in Manhattan until about 9:30 p.m. He is also active in community issues. For example, recently he helped form an organization to fight for maintaining a park in his neighborhood.

What seems most important to Jose, though, is not a long list of credentials, but people—his friends, his family, his neighbors. "Some people are just so bogged down with work," says Jose, "I'm open. I can talk with people... I have time to fool around, and I can be serious and do my work."

As a senior, Jose's grade average in 86.0. For the fall semester, he earned an 86 in Advanced Placement (AP) biology, 74 in AP calculus, 91 in English literature, and 90 in economics. At midyear, he had two absences and seven tardies. While his math and science teachers commented that Jose has the ability to do better, they also say that he shows a lot of determination, he is very open to suggestions, and he works well with his peers in a group context. His English and economics teachers describe him as being highly motivated and cooperative. Jose's main problem, they agree, seems to be his verbal skills, and specifically, his ability to express his ideas in writing.

Jose, who turned 18 in May, lives with his mother. He has two younger brothers. His ethnic background is Hispanic. Mrs. Guerrero was born in Puerto Rico and speaks Spanish as a first language. Jose says she earned her GED and is currently taking some college-level classes. Mr. Guerrero died in 1985, and Jose feels he must work to help support his family.

Program Entry:

When he was in junior high school, Jose says, he "had a feeling that he wanted to go in to medicine. He applied to several high schools, yet none accepted him into their programs. His current high school, however, put him on a waiting list. He was interviewed and then received an acceptance letter. It appears neither Jose nor his mother knew much about the Macy program prior to the summer orientation session. "I didn't know what the Macy program was...I never thought it was premed...I thought it was the store," he explains.

Assimilation:

Jose says he did not know what he was getting into when he started the summer program as a freshman. He did not mention having any specific expectations about the work, the courses, or what he might get out of the Macy program. He was open to new experiences, and he thought the orientation was worthwhile in that it gave him a head start in the fall. Today, he says he would tell incoming freshman that Macy is a good program if they're serious about becoming a doctor. He also would warn them that it is hard and they are going to have to work to succeed in the program.

Being a freshman was a whole new adventure for Jose. He remembers he met a lot of different people. Everyone was friendly and happy. And he liked taking the advanced courses in science and math. It seems Jose easily identified with the program and felt comfortable in the Macy classes. In fact, if he could relive one experience, he says it would be his freshman year.

During his last four years in the Macy program, Jose has noticed differences in Macy and other teachers. He says, "They teach extremely well...Some teachers talk and talk and talk, and go off the subject...[Macy teachers] are always right in the core of the lesson. And if you have a problem, they wait until you understand...they wouldn't go on."

Jose does not see any difference between Macy and regular students, however. He believes taking special classes does not necessarily make you smarter. "...If you take a person from a different program and put them into ours, he would have problems because he would not be exposed to that type of curriculum. But if he had started from the beginning, I feel he or she would have been able to get along," explains Jose.

He says what does make a difference is a student's determination. A lot of kids talk about things they want to do and become, but they do not push themselves, says Jose. He, on the other hand, not only pushes himself; he has also learned to balance a number of commitments—his family, his school work, his job, and his friends. Jose says it has been difficult working and going to school. He started working as a sophomore, and at first, his grades dropped. But after a while, he pulled them back up. Some nights he does not finish his homework until 1:00 a.m. Jose's AP calculus teacher says Jose is prepared nine-tenths of the time, but she thinks his job is one reason he is struggling with her course.

Jose knows Macy teachers are willing to help him. "You can talk to them, you can relate to them as a person," he says. "If you are having problems, they can make their time to be there...they don't have to do it but they do it to help us." He also knows his family, especially his mother and his aunt, support him. Mrs. Guerrero thinks the Macy program is good for Jose.

Retention:

Two Macy teachers, in particular, have had a tremendous influence on Jose—his AP biology teacher and his AP calculus teacher. According to Jose, his calculus teacher called him in after class one day and told him, "I know you can do better. I know you have it in you..." She said that he would have to strive for what he wants; he will not know how far he can go unless he pushes himself. Jose says she treats him like a son, that she is always there for him.

These teachers also have stressed the importance of giving back to the community. From them, Jose has gained a stronger sense of who is he is and where he came from. "I'll never change the way I am. I'll always remember the way I grew up, the way I got to the point where I am," he says.

Besides pushing Jose and instilling a commitment to his community, these teachers structure their courses so that students have the opportunity to learn from one another in groups. One says that Jose has benefited from the group support, especially since he is having a difficult time with the course.

For example, in this teacher's class, students take group tests, which account for 48 percent of their grade. "Kids actually talk during the test...they work their logic out. This helps [Jose] understand a lot better. The class functions as a collective, rather than the best students getting the best grades," explains the instructor. His AP biology teacher adds that the group process is an integral part of other classes and in counseling sessions.

Even though Macy students work collectively in some classes, Jose, as a senior, still feels the competition. He knows that there are other students who make higher grades than he does. But he says, "I don't let them intimidate me because I feel I can make it as well as they can."

He did not mention the name-calling and ridicule other students have talked about. Jose says his non-Macy friends support him. "Some of them are in high school," he explains, "but they're just taking [regular] academic courses." And though they may not understand how he manages everything, they think his participation in the Macy program is good.

One thing that keeps Jose on track, he says, is "just the thought of wanting to be better...to know you've done it, and nobody is going to take that away from you." Being in Macy has made Jose more conscious of his priorities. "I never used to have to spend time on homework and books and stuff like that. Now I really do. They grade us hard. They want you to do well."

Jose's family reinforces his priorities. While Mrs. Guerrero may not know other Macy students or parents, she does try to attend the parent conferences, and she says teachers call to let her know how Jose is doing. In addition, she emphasizes the importance of an education. She says, "I tell him first is school, then the work." She has confidence in Jose. "He can do it if he tries; he can make it to the top," she states.

Jose's aunt is also influential. She has told him, "You can do it, you can do it. Use your mind." She says if he wants something, he has to go out and get it because nobody is going to give it to him.

At present, Jose seems very focused on what he wants in the future. He hopes to attend a selective university in the Northeast and then go on to medical school to become an obstetrician. "I like babies a lot," he says, "I feel comfortable with them. I want to make it." Someday, Jose also hopes to open a free clinic in his neighborhood to help those who can not afford a doctor's care.

Program Impact:

Jose has been accepted at a number of in-state universities. Recently, he also received a letter of acceptance from his first-choice institution. He thinks that even if he had not been in the Macy program, he would have taken the advanced science classes and that he would still strive to go to college and medical school. He does believe, however, that he is well-prepared for the intense competition he will encounter in college and medical school. His teachers add that the enriched curricula, supplementary materials and research activities, and advanced courses such as genetics and bacteriology, will be to his benefit.

Mrs. Guerrero sees the Macy program's impact in a different light. She says that if Jose had not been in the program, he could have had a lot of problems. Though the courses have been very hard for him, he is feeling good about his accomplishments. She believes his participation in the Macy program has been very positive and will help him in the future as he goes to college and on to become a doctor.

Analysis:

Although his friends may not understand how, Jose has managed to get through the Macy program, maintain a decent average, work part-time, and still keep his commitments to family, friends, and community. What seems important is what has kept Jose in the program. In this case study, two factors appear to play a key role in retention: the student himself and his teachers.

Jose wanted to be in the Macy program . He applied to the program and was interviewed. Even though he had little prior knowledge and no clear expectations about the program upon entry, he was interested in medicine; he wants to become a doctor.

Jose says he wants to be better, and he takes pride in his accomplishments. No one, he says, can take that great feeling away from him. He has done it on his own, against some pretty difficult odds. It is evident that Jose has a strong inner drive; his source of motivation seems to come from within.

According to his teachers, he's determined, conscientious, and open to suggestions and new challenges. He also has a clear focus on what he wants for the future. And it appears, he is willing to put in the time and effort to do what he feels is necessary and important. By necessity, he has had to establish his priorities.

Jose's teachers have played an integral part in his retention. Two very strong role models provided guidance, information, encouragement, and a unique environment that kept him on track. They increased his awareness of the special challenges that minority students may face. They acknowledged his potential and pushed him to go as far as he can. They were available when he needed help, and they stressed the importance of helping others. Finally, they structured their classes so that Jose had an opportunity to learn from his peers as well as from them.

Jose did not mention any significant Macy experiences. He did not dwell on his friends—inside or out of the Macy program. While he did talk about the support of his family, he focused more on providing a clear picture of himself and the teachers who have been influential in shaping his sense of identity, priorities, and direction.

Case Study #16: Petra Armilla

Student Profile:

Petra Armilla is a whirlwind of words and actions. A twelfth grade Hispanic student in the Macy program at a high school in New York City, she is bright, she is quick, and she is an exceptional student report her teachers.

A sampling of her accomplishments during her four years of high school show the breadth and depth of her interests and talents. This spring, Petra was a Westinghouse Science Fair Winner and traveled to Washington, D.C. to accept this prestigious national award. She also has participated in math and science olympiads, and she served as captain of the Academic Olympics team. She has edited the campus science newsletter and served as an office aide.

In addition, Petra is a member of the National Honor Society and Future Physicians Club. In her junior year, she received the Athlete Scholar Award. She loves sports, played on the girls varsity volleyball team, and is reported to be a master of sports trivia.

Currently, she carries a 95.2 average. For the fall term, she earned a 95 in Advanced Placement (AP) biology, 91 in AP calculus, 97 in economics, and 97 in English literature. On her grade report, her teachers commented that she is highly motivated and cooperative. This year she has been absent seven times, six in the first marking period.

Petra's AP calculus teacher says she interacts well with students on all levels. She demands excellence of herself, but she "doesn't walk around with an air about her that she's better," comments the instructor. Her AP biology teacher says she has so much to give and she wants to get it out very quickly. He says he has to slow her speech down so others can understand her.

What impresses Petra's teachers most is her ability to overcome tremendous family problems. Evidently, Petra, who turned 18 in March, and her family moved to the United States from Santa Domingo six years ago. She has one younger and five older brothers and one younger and five older sisters. Her parents have been back and forth to America and finally decided to return to their native country.

Petra, it appears, has been bounced from relative to relative. Things have stabilized somewhat in the last year. She currently is living with an aunt and uncle, whose home is over an hour away from school. Petra and her family speak Spanish as a first language. She occasionally translates for her aunt.

Program Entry:

Details about Petra's entry are sketchy. She came to America in sixth grade. She remembers reading about the Macy program in the high school directory. Although she attended an orientation session, she does not recall what staff members told the group. As a senior, however, she would tell other students interested in the program that it is competitive, yet it is a good experience because it provides exposure to so many different things.

Assimilation:

Petra's memory of significant events and relationships that might have contributed to her sense of identification with the Macy program is also fuzzy. She has a difficult time distinguishing between Macy and non-Macy activities. She did recall participating in the DNA lab when prompted. And her records indicate that she has also participated in a summer program.

Differences between Macy courses and other classes offer a clearer picture of Petra's assimilation. She says Macy classes are harder. The tests are longer and there is more writing. Topics are covered in more depth, beyond what she feels is probably required in regular classes.

Macy teachers, she says, push students and grade harder. "...Teachers in the Macy program make sure you learn... Their teaching methods are so good that if you don't get it, something is wrong," she explains. But if you don't get it, she adds, "then they explain to you. And if you still don't get it, you ask your friends."

One thing that Macy students have in common, according to Petra, is that they all want to go beyond high school. To them, high school is just a stepping stone, says Petra. While Macy students may have a sharper focus on what they want to do with their lives, Petra does not believe that they are any smarter than other students.

Petra contributes a lot to school organizations and activities, and she also carries a lot of responsibilities at her aunt's house. Childcare and cooking are evidently part of her daily routine once she gets home. Yet, she did not mention being pulled by her numerous commitments. In fact, one Macy teacher said that even though she had to juggle her schedule to participate in the Westinghouse competition, she still came out with the top average in her class.

Petra perceives her teachers in a very positive and supportive light. She knows that they will stay after school to help her. It was not clear, however, how much support

she gets at home. Her aunt and her uncle are very strict, says one teacher. Apparently, they also have high expectations of Petra. Petra says, "They're always pushing me...they know [Macy] is giving me something more; they always make sure I'm on track."

Retention:

"Why would I want to get out? I'm getting a lot of benefits. I'm getting something extra, and why not get the extra? I want to go on!" responded Petra when asked what has kept her in the Macy program.

The benefits to Petra most likely include the extra attention and support she gets from her teachers and the closeness she feels among her Macy peers. Even though she has little time for socializing, Petra says her two best friends are in the program. She adds, "Everyone here has a positive attitude and has had a positive influence."

According to Petra's AP biology teacher, "The kids in the Macy program feel this kind of comradery, that they are in this together, and they feel the need to help one another. And we have a certain rapport with them that seems to work."

Peer interaction and influence has not been entirely positive, however. Petra seems to be highly competitive, and, according to her AP calculus instructor, has a difficult time when she has to depend on others. In this class, students work in groups. Students with high grades may be grouped with those with low grades so that each group has the same cumulative average. Petra struggles with the idea that her average for the class depends upon the performance of the other members of her group. The teacher points out to Petra that ultimately she gains because she can understand the material better by explaining it to others.

In a previous English class, however, Petra was the one who needed the extra help from her peers. Her teacher says, "It was interesting to watch because she was in a situation where she wasn't the best, yet she was smart enough to know she could use her intelligence and she got a lot from the other students."

It seems fairly evident, given her family situation and the academic load she is carrying, that Petra is not just a survivor, she thrives on a challenge. For Petra, the next challenge is college, and she hopes to attend a highly selective university in the Mid-Atlantic region. As for her career goals, Petra says, "I've always wanted to become a doctor. And I found early on that if I want to become a doctor, I would have to keep on trying."

Program Impact:

It is difficult to determine exactly what impact being in the Macy program has had on Petra. Neither her aunt nor her teachers commented on this aspect. While other students say that being in the Macy program has affected their social life and their outlook on school and the future, Petra did not articulate such changes.

She admits she has less time for her friends, but she says the time she does spend with them is "quality time." Since she has always wanted to be a doctor, she says her future plans have not changed. According to Petra, being in the Macy program has offered her exposure to new experiences, new ideas, and new people.

Analysis:

Upon first meeting Petra, it is easy to be swept up and away by the external rushes of her fervor and zest. Her rapid speech, and shifts in volume and intonation are a challenge to understand;. But as this whirlwind of words and motion dissipates, one can begin to see some of the struggles she has encountered and the positive impact she has had on others over the last few years.

For example, Petra offers only a brief sketch of her move to America, her parents, and her aunt and uncle. She didn't talk about the disruptions in her life. Although her teachers filled in some of the details, there was disagreement about her current home environment. The extent of family/parent influence is still an enigma.

Petra speaks of her peers in general terms. She talks about them being a "tight group" and that her two best friends are in the Macy program, but she does not mention their interdependence on one another in Macy classes. Instead, she says others come to her for help and that tells Petra that she is doing better than they are. Her AP calculus teacher's comments shed light on push and pull of competition and cooperation that exists among Macy students, especially those who are at the very top and who appear to be very independent like Petra.

Case Study #17: Lila Thompson

Student Profile:

Playful, cheerful, fun, and funny describes Lila Thompson, a ninth grader in the Macy program at a high school in New Haven, Connecticut. Her feelings show on her face and in her voice; just talking with her is a joy. "She has a great personality and is very easy going," says one Macy teacher.

Yet Lila is also upfront—she will be the first to say she has a temper and that this sometimes gets her into trouble. While she may be stubborn at times, especially with her younger sister, she does not get frustrated easily or complain. There is a childlike innocence about her; she seems to possess that rare gift of enjoying the moment and getting as much out of it as she can. According to her mother, she is a go-getter.

Besides playing on the girls' softball team, Lila also belongs to a sorority for African-American teens. The organization offers Lila and other girls an opportunity to socialize, serve the community, and go on field trips to college campuses. In addition, Lila likes working with small children and has been a summer camp counselor for toddlers.

Academically, Lila is doing quite well. For the third quarter grading period, she earned a B in algebra I and trigonometry, B- in freshman biology, A in honors English, A- in Spanish, B+ in western civilization, and A in Macy study skills. This year, she has been absent four times. A Macy instructor says Lila is a highly motivated student. Her math skills are good; and her English skills are satisfactory. In the word processing unit which Lila is currently taking as part of the Macy elective program, the teacher says Lila is achieving well.

Lila, who turned 15 in April, lives with her mother, one brother and two sisters. Mrs. Thompson, who attended a junior college, works as a teacher's aide at a middle school. Lila's older sister attends a community college. Lila, like her mother, was born in New Haven. English is the first language for the family.

Program Entry:

Lila first heard about the Macy program from a high school counselor who visited her middle school during eighth grade. After the presentation, Lila remembers her middle school advisor distributed recommendation forms "to certain people she thought would be good for the Macy program." Lila received one, asked her teachers to sign it, and returned it. The summer before ninth grade, she received a letter telling her she was in the Macy program.

What caught Lila's and other students' interest in Macy, she says, was "that it was for people who were college bound..." She also mentioned that some students enter the program because they want to be doctors or biologists. It seems selection, teacher recommendation, and her prior knowledge played an important part in Lila's decision to enter the program.

Assimilation:

Both Lila and Mrs. Thompson expect that Macy will prepare Lila for college. Lila says that her teachers talk about different campuses and their facilities, college classes and expectations, and college life in general. So far, Macy has been what she expected. She was surprised, however, by the large number of students who joined the program. She says she would tell others interested in Macy that it is a "good program, especially if you want to get into college or if you want to be a doctor or biologist."

Lila has heard that, as a Macy student, she will participate in extensive laboratory work and go on a number of field trips. She also hopes Macy will offer her the chance to meet new people and make new friends.

It appears Lila has already made a lot of new friends and feels a part of the Macy program. A staff member says she gets along well with everyone. Instead of staying with one cluster of kids in her ninth grade class, she has broadened her circle of acquaintances through the seventh period Macy elective class. Students are divided into groups for each rotation, and the groups change from one rotation to the next, according to a Macy teacher.

For example, while Lila may be with one class of students for science and math, she could be with another group for word processing or library skills. Small group projects, where students have to depend on one another, promote bonding and identification. In addition, field trips, special guest lectures and weekly programs just for the Macy elective class foster a sense of belonging and stability. One speaker, for instance, that sparked Lila's interest in medicine was an orthopedic surgeon who shared his slides of a surgical operation for a patient with arthritis. She says, at the time, she turned her head because she could not "stomach the sight;" but now she is braver and wants another shot at the picture of the metal plate being inserted into the knee.

Lila also says that they have learned skills and strategies for better self-control, and she is trying to apply this new knowledge to keep a cap on her hot temper. In addition to workshops and guest lectures, the students also use seventh period to talk about their day of classes. There is a lot of comradery among the Macy elective students, Lila says. For Lila, the hardest part is just keeping up with the

teachers and "staying awake knowing it is the end of the day." "But sometimes," she admits, "we're just so full of energy we're hard to calm down."

Unlike the Macy program at other schools, where Macy ninth graders are grouped together in English and science classes, Macy ninth graders at Lila's school may be together only in their seventh period study skills elective class. Thus, it becomes difficult for them to differentiate between Macy teachers and students.

However, Lila does think Macy students learn more in their study skills course. She believes she is getting something other people are not. Already this year, she says she has learned how to type faster, how to figure out how much it would cost a month to buy a house, how much it will cost to go to college, how to do analogies for the SAT, and about fossils. "I think we're learning all the subjects in one class," she states.

In the seventh period course and her other classes, Lila evidently gives everything she has. Because of her ability to focus on the moment, balancing her commitments to school, sports, friends, and family does not seem to be a problem. According to one instructor, Lila "has a good sense of humor but that doesn't interfere with academics. She's involved in extracurricular activities, but that doesn't interfere either."

Yet, Lila claims she does not spend a lot of time studying for tests. "...I remember a lot of things. If I study it seems like I forget them. I freeze up," she explains. On an average day, she might spend two hours on homework. Again, the important thing, says Lila, is that she has the chance to delve deeply into the work when she is studying.

Although Mrs. Thompson thinks Lila worries too much about her school work, she is supportive of her daughter's participation in Macy. "I told her to go for it," she says. Lila also feels similar support from her teachers—both in the Macy elective class and other courses. Her Macy teacher, however, seems to have an especially positive relationship with Lila. She has had the opportunity to work with Lila in different subject areas as well as outside of school through church activities.

Retention:

"A lot of other kids are doing a lot of other things, but [in her journal] Lila wrote she that she just doesn't have the time to get into trouble. Her priorities are very good for a fourteen year old. She has her head on straight," says a Macy teacher.

According to Lila, her mother, and Macy staff, going to college is a priority, and this keeps her focused on school now. Currently, she is thinking about competitive colleges both in and out-of-state. She says her cousin is going to college and he said it was fun, but a lot of work. Beyond college, however, she still is unclear about a career. Teaching and law have caught her interest; so has sign language. Last summer while working as a camp counselor, she encountered a child who communicated through sign language.

Lila not only has her sights set on college, she also has the drive to get there. Mrs. Thompson says Lila sets high standards for herself. "Anything she's interested in, she'll go for it, especially college," comments Lila's mother. Her Macy teacher agrees; "Lila is highly motivated and I don't know where this came from because she had it when she got here." And Lila believes that if there is anything that will keep her on track in Macy, it will be herself. "If I really like it, I'll stay in...," she states.

Besides a strong inner drive, Lila also has a solid network of encouragement. She knows her teachers will help if she has problems. "They talk to us privately...they sit down and talk to us about our problems," she says. In addition, she knows her teachers will arrange for a tutor if she is having trouble in a subject. According to Lila, her trigonometry teacher has been particularly influential.

Lila also sees her peers as helpful. A lot of her friends are in the Macy study skills elective, and they encourage one another. "If someone is messing up, we tell them, 'Come on, you can't mess up on all of us. We are in this together,'" says Lila. And while other ninth graders who are not in the Macy program may tease her about having an extra class for the next three years, Lila chides back, "Aha, we're going on trips and you're not. We get out of school sometimes."

Mrs. Thompson, too, plays an important part. Lila sees her mother as a role model. She says people at her mother's school have encouraged her to go back to college and become a child psychiatrist. Evidently, Mrs. Thompson is quite effective with one student who is a real challenge to school staff.

Even with her own work and four children at home, Mrs. Thompson still attends school conferences and meetings to talk with Lila's teachers face to face. At home, Lila's mother says, the family sits down and talks about school and other things. And when Lila has a tough time, Mrs. Thompson encourages her "to just try."

Program Impact:

Mrs. Thompson and Macy staff believe that Lila would still be Lila if she weren't in the Macy program—she would still have her same personality and be highly motivated; she would still get along. Yet one Macy teacher points out that without the program, Lila's "band of experiences" would be much more narrow. She says being in the Macy program offers Lila a lot of opportunities to explore many directions.

Lila feels she has gained valuable skills and knowledge from her participation in the ninth grade Macy study skills elective. She feels better prepared for college—not only in

academics but in a practical ways as well. Her teachers have made college—experience and the expense—more of a reality for her.

She also has developed critical interpersonal skills, such as learning how to work in a group and how to control her temper. Finally, Lila says she has discovered that she can do something other people can not. In her science and math class, she helped a friend who did not understand the material. "She did learn something, and I learned that I can teach," says Lila.

Analysis:

Lila's case study, as an example of what happens in the ninth grade Macy program at one high school, offers a closer look at assimilation and what makes students identify and feel a part of the Macy program. The emphasis for first year students at this school, it seems, is on feeling part of a special group and building a common base of skills and experiences that broadens their perspectives and prepares them for the advanced courses later in high school.

On this campus, the primary difference between Macy and non-Macy tracked students is the study skills elective. At the ninth grade level, there is only one "Macy" teacher, who serves as the "teacher of record" for all ninth grade Macy students. Other subject area teachers move in and out of the Macy rotations, contributing in their areas of expertise. Students are not placed in a Macy English or a Macy biology class, where they and others perceive the material to be covered in more depth, the test to be harder, and grading tougher.

At this school, Macy students sign up for the Macy elective; and during this class time, they are exposed to library and research skills, the scientific method, special labs, word processing, and activities that call for the application of basic math, verbal, and interpersonal skills. Most of the activities, according to Lila, are fun, worthwhile, and special. There are also Macy field trips, and these seem to contribute to a sense of cohesion among the students.

In addition, group work in the library skills rotation, making banners and competing as teams, and group discussions not only enhance the students' sense of identity, these activities also provide the opportunity to help one another and to create a sense of belonging among Lila and her peers. They are learning to depend on one another and they are establishing that spirit of cooperation and collaboration that is important to completing all four years of the program.

Case Study #18: Alison Smith

Student Profile:

Alison Smith, a tenth grader in the Macy program at a high school in New Haven, Connecticut, takes pride in being her own person and doing things her own way. Last summer, as a freshman, she traveled to Tuscaloosa, Alabama, for Bioprep Camp at the University of Alabama, and she boasts, "I did it all by myself!"

At camp, Ali made lots of friends—that is just her nature. She says, "I talk a lot...I make friends with anybody and everybody...I accumulate so many friends..." The Macy program coordinator describes Ali as a "pleasant kid with a nice personality." Yet even though she gets along well with most everyone, Ali is not afraid to stand up for what she thinks is right. Her mother recounted two altercations when Ali stood her ground with other female students at school.

As a sophomore, Ali has chosen her extracurricular activities carefully. Last year, she was on the girls softball team. This year, she works as a student page at the public library in the afternoon. She is quite knowledgeable about library procedures and is occasionally entrusted with the responsibility of overseeing the patrons' use of valuable documents and collections. Besides school and work, Ali enjoys singing with her church group, running track, playing basketball, and drawing.

For the third grading period this year, Ali earned a C in honors English, A in chemistry I, B in algebra II, C in U.S. history, B+ in Spanish I, and B+ in law seminar. The Macy coordinator says Ali is in the top 25 percent of her class; he thinks she has the potential to be in the top 10 percent.

Her academic strengths, according to the coordinator, are that she expresses herself well and is willing to solve problems and seek help. He allows students to retake tests in his geometry class, and he said that last year Ali took advantage of this option if she performed poorly. Although she does make up missed work, she becomes easily frustrated and her motivational level is a little less than what he would like to see in a Macy student. He says she could be better prepared and more prompt for class. So far this year, Ali has missed three days of school and has accumulated 15 tardies.

Ali, who turned sixteen in February, lives with both parents, two brothers and two sisters. Her ethnic background is African-American. Both parents were born in New Haven; both speak English as a first language. Mr. Smith attended a technical college and currently works for a steel company. Mrs. Smith did not finish high school but has earned her GED; at present she is at home with Ali's new brother. According to Ali, Mrs. Smith previously worked in a hospital. Both Ali and her mother mentioned the positive influence of extended family members who live in the area.

Program Entry:

The summer before ninth grade, Ali and her parents received a letter about the Macy program. At first, she thought it was related to the department store but then she realized that she had heard about the program from a junior high teacher and a cousin who had been a Macy student. Ali recalls her junior high teacher advised her to go to one high school instead of another and to get into the Macy program . She says her cousin told her that the program would "open a lot of doors to different summer programs, like Choate-Rosemary Hall," to which she applied last year but was not accepted.

Mrs. Smith remembers attending a meeting where the staff talked about the program and how it would prepare students for college and provide different experiences, such as visiting hospitals. Because Ali has always wanted to become a doctor, she says the chance to take anatomy and physiology and solve patient cases caught her attention. Apparently, both Ali and her mother saw the program as selective and special.

Assimilation:

The program coordinator thinks Ali expects that she will be better prepared for college because she was in the program. Mrs. Smith, after attending the parent meetings, also thinks participation in Macy will be a benefit when Ali attends college.

After being in the program for almost two years, Ali says she has already experienced more than she expected. Last year people told her that they would not get to do anything. But as a second year student, she has been on several field trips and to Alabama.

A trip to the Boston Museum of Science, the extra homework, and other Macy activities, such as the quiz bowls, making banners, giving speeches and conducting research projects, have created a strong identification with the Macy program for Ali. She was especially enthusiastic about the Bioprep camp and wishes she could return.

In addition, Ali also has enjoyed the group discussions about peer relationships, teenage life, girlfriends, and boyfriends. They have provided an opportunity for bonding and to practice important problem-solving skills.

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Besides these opportunities, Ali also notes other differences in what Macy students and students in other programs encounter at her high school. In the ninth grade, for example, she says, "Freshman study skills is filled with what you've already done in your previous six classes; in the Macy program, you have a variety of different things about the medical field and library research."

She thinks the Macy courses are a lot harder and better organized. For instance, she says in a Macy class, the teachers already know what they are going to do and, if there are changes, they make sure the students mark these on their assignment sheets. They have higher expectations and they grade harder, she adds.

Ali also says students seem better prepared in a Macy class; they have a better idea of what to expect. And, she adds Macy students get a lot of help if they do not understand the material.

Knowing she can talk to her teachers and counselors also has helped Ali feel a part of the Macy program. The Macy coordinator says that last year, in particular, Ali needed a lot of support and encouragement. Her parents have also been supportive. Mrs. Smith says "they are 100 percent behind Ali."

Although being in Macy means an extra class and more school work, Ali does not seem to be struggling to balance her commitments. Instead of participating in a sport this year, she chose to concentrate on her studies and work at the library. She did mention that some of her Macy classmates have dropped out since last year because they could not handle the academic demands.

Retention:

At present Ali thinks she is doing well in the program, and there do not appear to be any real threats to her staying in the program. Most of her friends are in the program. Although there are occasional negative comments about being in the Macy program, these do not seem to bother Ali. She explains, "They get upset and say we get on their nerves. I say 'Well, you have a chance to get in [Macy] too."

As mentioned before, Ali knows she can get extra help from her teachers. When she is not doing well, she says they "get on her case." In addition, teacher involvement in the Macy team activities provides Ali and other students the opportuntity to get to know the Macy staff members on a more personal level.

Although teachers and peers play an important role in Ali's retention, it seems that her family exerts the most influence. Both Mr. and Mrs. Smith expect Ali to go on to college. They want her to have better things in life than they have. Mrs. Smith tells Ali that when she was her age, she had similar opportunities, but her mother did not push her because she did not understand the importance of school. "I tell her there's nothing out there in the streets. It's all in school. Those silly rap songs...they're nothing—you can think better than those [singers]," says Mrs. Smith.

Mr. Smith's mother and sister stress the importance of an education. Ali's aunt works in admissions at a local college, and her grandmother is a teacher's aide in an elementary school. According to Ali's mother, Mr. Smith's parents encouraged their children to go to as far as they can, and they also motivate their grandchildren.

Mr. and Mrs. Smith's interest in Ali's schoolwork extends beyond home. Mrs. Smith says she has met many of her daughter's teachers and has conferred with them when there has been a problem. Ali claims her parents talk to her teachers every chance they get.

The family's emphasis on school has paid off. Ali knows that the upper level courses are harder and that she will have to concentrate more. She also knows she is going on to college and has clarified her career goals.

"I've wanted to be a doctor for as long as I can remember," she says. She hopes to specialize in obstetrics and gynecology and has learned that to do so requires a minimum of eleven years beyond high school. Still, she is determined. Her mother acknowledges Ali's decision and resolution. "I know she'll do what she wants to do...she has the drive to learn as much as she can about anything," says Mrs. Smith.

About her career choice, Ali says, "I love children but I didn't want to become a pediatrician because I didn't want to stick needles into little kids and have them scream for help. Besides, bringing new life into the world is one of the best experiences anybody could ever have."

Program Impact:

Ali believes that her two years in the program already have given her a better background in science and math, and she sees that the work she did last year in the Macy study skills course has helped her in chemistry this year. In addition, she knows she will have a stronger background and a better idea of what to expect when she goes to college. Bioprep Camp, in particular already has given her a taste of campus life. In Ali's words, her future appears "a lot brighter" because of the different opportunities the Macy program is opening up for her.

On a more personal level, Ali says she has gained a better approach to solving problems since being in the Macy program . Plus, at least one relationship with her peers has changed. She explains, "One friend puts me in the category of her mother because I get on her fo skipping [classes]."

According to Mrs. Smith, the Macy program has "been a good experience and [Ali] has benefited from it." She has

acquired both knowledge and a more mature attitude since being in the program, says Mrs. Smith. She laughs, "She comes home with words I've never heard of." Mrs. Smith believes the Macy program is keeping Ali on track. "She wants to go on and learn as much as possible about being a doctor," comments Mrs. Smith.

The Macy coordinator thinks Ali's participation in the program has helped in a number of ways. "Being in the program has put her in a competitive element and surrounds her with students who are interested in learning," he says. He believes that if Ali had been thrown in the mainstream, she would be a mid-level student, perhaps borderline. Macy, he says, has helped Ali push herself to higher achievement.

Analysis:

Two things seem particularly important in Ali's case: her parents and her Macy experiences. Mr. and Mrs. Smith, and her extended family, have been very influential in motivating and keeping Ali focused on school. They have established education as a priority and serve as positive role models. They are supportive of her efforts, and they seem to be involved in her progress. Mrs. Smith seems very close to Ali; they often have heart-to-heart talks. Both she and Ali's aunt have communicated a clear message that Ali's future lies in school.

Additionally, the experiences Ali already has had in the Macy program have grounded her, given her a sense of identity, independence, and direction. The problem-solving skills she is learning through Macy group discussions are immediately applicable in her personal life. Plus, she sees connections between the knowledge she gained last year about research and scientific methods and the courses she is taking this year.

Ali's participation in the Macy program has reinforced the message from home. Her focus is on school and her future. As a Macy student, she has not only sampled college life, but she also has many opportunities to learn more about the medical field.

Case Study #19: Cecil Browning

Student Profile:

An eleventh grader in the Macy program at a New Haven, Connecticut high school, Cecil Browning wants to leave his mark on his world. "Whatever I do, I want to be the best," he says. To get what he wants, to be successful, Cecil says he would rather work hard now and pass up a few recreational pursuits.

Cecil likes to learn; he welcomes a challenge. His mother says he has always been a debater. Never satisfied with just one or two reasons, he will press for more. His Macy anatomy and physiology teacher describes him as a hard worker. He is concerned about his grades and keeps on top of his assignments. Even Cecil says he does not think about the work in his Macy science elective as being difficult or overwhelming; he just gets it done. "I do whatever it takes so I do not know if it is a lot," he says.

Yet, there is another side to Cecil—one that is softer, more low key. According to his anatomy and physiology teacher, he is tolerant and friendly; he has a nice personality and seems to get along well with others. And while he appears determined about his future success, she says in her class, "He does not seem to have enough confidence in himself to know he is going to do okay."

Currently Cecil is earning a B in his Macy elective. For the third quarter, his grades were B+ in college English 11, D in algebra II, B- in advanced chemistry, B- in Macy anatomy and physiology, and B- in U.S. history. His grade report shows 10 absences so far this year.

At school, Cecil plays basketball and golf. He also has participated in the Upward Bound summer program at a state college. Besides school sports, he likes to bowl and draw cartoons. To help out at home, he works after school in food services at a local hospital.

Cecil lives with his mother and two brothers. His parents have separated and are seeking a divorce. Mrs. Browning is a child care provider and has taken some college courses; Mr. Browning works for the telephone company. Both parents speak English as a first language. The family has resided in the area for some time, and Cecil mentioned being close to extended family in the area.

Program Entry:

Two events marked Cecil's entry in the Macy program. First, he remembers a high school student visiting his middle school to talk about the Macy program. While his memory is a bit hazy, Cecil does recall, however, the mention of a seventh period class and that the Macy program would "look good on his record." The second event was a parent meeting which Mrs. Browning attended. Apparently, she already knew some of the teachers from when she attended Cecil's high school, and they told her about the program. So when Cecil mentioned the Macy program to his mother, she encouraged him to enter.

The summer before ninth grade, Cecil received a letter about the Macy program and an application form, says Mrs. Browning. They completed and returned the form, and she thinks he attended an orientation session. Cecil says what caught his interest was the selection process and that he would be taking extra science classes. "They said everybody couldn't be in it so I figured that if I was in it, I have to be doing something right," he explains.

Assimilation:

When he arrived as a freshman, Cecil says Macy staff made it clear that the extra class would be worthwhile. "They said it would be a good learning experience and that we would get something good out it. It wouldn't be just another program with no weight to it," he comments. After almost three years in the Macy program, Cecil says he would share the same message with upcoming ninth graders. He says, "It's a good program. They can benefit from it, from a lot of stuff they wouldn't learn [otherwise]." But he counsels, "It's not like it's a boat ride or anything. You still have to work."

While Cecil could not recall any significant experiences that might have contributed to his identification with Macy, he did say that he liked the chance to work in groups. Another aspect of the Macy program that appeals to him is being with the same classmates in seventh period from year to year. For Cecil, it seems the opportunity to work with his peers in groups and the continuity of relationships has helped him feel a part of the program.

In addition, he does see several differences between his Macy class and other classes. For instance, in Macy classes he thinks the material is more advanced. In particular, he mentioned his work in analyzing the patient case studies. He says there is more discussion in the Macy elective; in fact, he adds, "We discuss everything. Whenever we finish the assignment or what we did as a group, we discuss it. Everybody gets to say their opinion."

As for the differences in teachers, Cecil thinks some non-Macy teachers are "just there for their paychecks." Macy teachers, on the other hand, "really take the time to explain it to you," he says. "Plus, they're your friend, too. Say you need help, they won't just give you the answer. They'll sit there and ask you questions as if they didn't know either," he adds.

This teacher support and the support he receives at home play an important part in establishing a sense of

belonging. Mrs. Browning realizes that Cecil has a lot going on in his life right now. She is concerned that the divorce might be difficult for him, but believes he is doing fine. Perhaps his energy is being directed more toward school, sports, and work than on his family situation, she says.

At least for the present, Cecil seems to be keeping his commitments in balance. After his Macy elective, he goes to golf practice. From 4:30 to 8:00 p.m., he works at the hospital. When he gets home in the evening, he usually spends about an hour or two on his homework. If he does not finish, he still has a first-period study hall. During basketball season, however, he found it more difficult to keep on top of his school work. The games were sometimes scheduled during his Macy class, says Mrs. Browning. And though he was allowed to make up his work, he was under a lot of pressure and still did not do very well.

Retention:

Nevertheless, Cecil keeps trying, even though many of his friends have dropped out of the program. He and his mother mentioned one friend, in particular, who quit because he was having trouble and felt it was too much for him. According to Mrs. Browning, Cecil and the young man had talked about being business partners in the future. When his friend quit, Cecil remarked, "He's not going to be partners with me. He'll have to hold his own." Now, Cecil says his friend wishes he could get back in the Macy program.

Cecil says the big issue for students in the Macy program is staying after school for seventh period. Cecil thinks most of the students are just lazy. "I know a lot of students who dropped out because they didn't like being here. Everybody goes home at 1:45," he explains.

But Cecil looks at the Macy program differently to the regular classes. He likes the program and he likes being with students who are serious about learning. About his Macy classmates, he says, "They're here to work. They won't distract you while you're trying to get your education. Some people don't want it and you know they're not in the program so you know you're going to get your education that day."

Cecil also sees Macy as a better alternative. He asks, "What are you going to do when you get home? Nothing. Why don't you stay and learn something? That's how I look at it." In addition, he says, "If some people are willing to spend money so you can learn, you should take advantage of it."

According to Cecil, the school's Macy coordinator pointed this out to him when several of his classmates were complaining about having to stay later. Though Cecil did not mention other Macy staff, it is apparent from his comments that the teachers play an important role in keeping him on course and preparing him for college.

His Macy elective teacher says Cecil responds well to the one-on-one interaction and caring shown by his teachers. In addition, the teachers have created opportunities for students to work together in groups. And when some of Cecil's friends dropped out, one Macy instructor says she encouraged Cecil "to stay with it."

Mrs. Browning says the teachers send her notes about Cecil's progress when she can not attend parent conferences. According to Cecil, though his mother may not attend all of the meetings because of her job, she "knows what's going on." Mrs. Browning added that when her children have special exhibits at school, they attend as a family. She has also told Cecil that "to do anything he will have to have an education." She makes it clear that his education comes first, before basketball and his job.

Cecil's uncle, father, and godfather also have a positive influence. He sees his uncle as a role model. Cecil explains, "He's successful because he did what he was supposed to in school and went to college and now the payoff is here...that's how I want to live—just like he's doing." His uncle, says Cecil, is an electrician for a large corporation and was one of six people to be trained on a special computer. About his uncle, father, and godfather, he remarks, "Whatever they did, they were always good. You know they were there."

In thinking about his own future, Cecil says he wants to become an architect. While he knows he will go to college, he has not decided where. However, he states, "I just do not want to go to any college. I want to go to a college that has the best architectural program."

Program Impact:

"They say your freshman year [of college] is the hardest, but I'm going to get prepared for it now," states Cecil. He feels the extra science classes, special PSAT/SAT preparation, and group experiences will help him when he goes off to college and later in the real world when he gets a job.

His anatomy and physiology teacher also believes the Macy program has had a positive impact on Cecil. She says he has reaped benefits from the personal attention and caring and being known by his teachers. She feels if Cecil had not been in the program, he might have fallen in to the "wrong crowds" and, because of his quiet nature, perhaps would have been content with taking the middle-of-the-road route.

According to Mrs. Browning, the Macy program not only has taught Cecil how to study and made him more prepared for college, but also has made him feel more confident and independent. "At first he thought he could not do it, but he seems to like it," she says. If he had not been in the program, she feels he probably wouldn't be so "gung ho" about school. She believes Cecil "will look back and realize it was the right thing to do."

Analysis:

Retention appears to be the central issue for this student. For Cecil Browning, as for other male Macy students, staying in the program is a very real challenge. Even he says the Macy program is no "boat ride." He is struggling academically, and evidently his family is struggling financially. In fact, at one point, he told his mother that he wanted to drop out of the program so he could work more hours.

Cecil seems to be pulled in two directions. On one side are his Macy classmates whom he has known for the last three years. He is buoyed by the continuity, knowing that each year seventh period will include pretty much the same people. He enjoys working with them in groups and he likes being with others who care about learning. They exert a very positive influence.

On the other side are his friends who already have dropped out because they could not handle the work or pressure. Still others have left the program because they did not like staying for seventh period. Both Cecil and his mother talked about the students who quit the Macy program. For Cecil, staying afloat has not been easy when so many others have jumped ship.

Cecil, however, now seems to be on a steady course. His mother says he has a pattern now. In addition, he feels comfortable with his Macy classmates. And his family and teachers have provided the needed support and direction.

Case Study #20: Chanel Lawrence

Student Profile:

Intense, involved, determined, and conscientious are big words for a young lady Chanel Lawrence's size. Yet they accurately describe this petite Macy senior at a New Haven, Connecticut high school. Though almost doll-like in appearance, Chanel does not let others define her existence; instead she constantly seeks new experiences.

For example, this term she is participating in a practicum at a local hospital two afternoons a week. She has observed surgery on a five-year old patient and learned about different areas of medical practice. In addition, she volunteers in her church's soup kitchen and sings in the choir. As a member of a young African-American women's leadership group, she is active in community service.

At school, she has trained for the Peers Helping Peers Program and participates in the senior-freshman buddy program to ensure a smoother transition for ninth graders. Chanel also serves as vice president of her senior class and is a cheerleader. Already, she has received scholarships from her church and for an oratorical contest.

Chanel's academic record is just as impressive. This grading period she earned an A+ in honors English 12, B in calculus, B in physics, B in Macy microbiology, A in French, and A in the medical practicum. Her science teachers see her as a hardworking student. They say she asks questions and seeks clarification if she does not understand or wants to go beyond what is covered.

Life is not all work and serious pursuits for Chanel, however. She likes to read and collects stuffed animals. She enjoys going to the movies and roller skating. While her social calendar is not packed with engagements, she does have friends in and out of the Macy program. Her teachers say she relates well with others within a group situation and her classmates respect her.

Chanel, who turned 18 in April, comes from a very stable home life. She lives with her parents, two brothers and two sisters. Her father operates his own carpentry business and is also a minister. Although her mother worked previously, she is currently at home and helps out with her husband's business. According to Chanel, both parents attended Bible college. Religion plays a key role in their daily life. The family speaks English as a first language.

Program Entry:

Chanel says she first learned about the Macy program in a letter she received the summer before ninth grade. Then, at freshman orientation, the Macy program coordinator talked to all the students who were interested and their parents. She does not recall what he said, but she thought the program sounded worthwhile so she decided to give it a try.

Mrs. Lawrence remembers hearing about the program at work. She, too, thought it sounded interesting, and several people encouraged Chanel's involvement.

Assimilation:

At first, Chanel says she did not know what to expect. She was not even thinking in terms of college or a career. And she had no idea that she would be taking microbiology in her senior year. Today, however, as a four-year Macy veteran, she would tell others who might want to join that it is a good program, especially for students interested in science.

After four years in the program, Chanel has accumulated a wealth of experiences. Besides participating in the student practicum, she has been to Bioprep Camp in Alabama. In addition, the Cold Spring Harbor DNA lab, patient simulations in anatomy and physiology, this year's work in microbiology, and opportunities for research and group projects also have helped Chanel feel a part of the program.

These activities not only have fostered identification with the program, however, they also have provided a basis of contrast between Macy and regular classes. Chanel says the atmosphere in her Macy classes has seemed more relaxed. Students are expected to contribute and, in some instances, are even graded on class participation. In microbiology, she says she has to work hard just to get a B. "Some teachers," she explains, "give out A's too easily. My microbiology teacher cares about how we will do in college and gives us the real grades we deserve."

While Chanel talked most about her microbiology teacher, Mrs. Lawrence's comments about Macy teachers were more general. She said that they are supportive and that Chanel has always been able to get the help she needs. At home, Mr. and Mrs. Lawrence have been equally supportive. Mrs. Lawrence, in particular, seems very knowledgeable about what Chanel is doing in her Macy class and she thinks it is a "really great program." In fact, Chanel's involvement prompted them to inquire about the their fifteen-year old daughter getting into the Macy program.

With so much going on, it is a wonder Chanel does not feel stretched in too many directions. Both her mother and at least one of her teachers believe she sometimes puts a lot of pressure on herself. Though Chanel says she spends two to three hours a night on homework, Mrs. Lawrence

says there are times when she will spend five hours and stay up very late. Yet Chanel seems very organized and adept at balancing her commitments to family, school and church.

Retention:

As with other highly motivated students, retention does not appear to be a problem for Chanel. All the support systems seem to be in place, and she has a clear idea of what she wants to do in the future.

Peer influence has been positive. According to one teacher, Chanel has several friends in the program and they offer her support. She has especially enjoyed working in groups. Another teacher says that the students in Chanel's Macy class are close; they are friendly and helpful to each other. And while Chanel says she does have friends outside of the program, they have not teased her about taking on the Macy seventh period elective. She says most of the students in other classes want to know more about the program; they also ask about the Macy jackets students wear with pride.

As mentioned above, Chanel's comments about teacher influence were primarily restricted to her microbiology instructor. One teacher interviewed said Chanel responds well to one-on-one interaction. A second teacher said Chanel knows she can talk to any of the teachers, and she will seek help if there is something she does not understand or when she has a problem.

The support network does not end at school, however. Chanel's parents have been instrumental in keeping her focused. She explains, "They have influenced my life so much. They tell me whatever I want to do, I can do it...they say go for it!" In addition, Chanel says her belief in God has also been important. "I believe that he can help me do anything...God gives me something to hold on to," she says.

What does Chanel hope to do after she graduates? Certainly college is in her future. And beyond that, she hopes to become a pediatrician. She says when she was twelve years old, she saw pictures of starving children in Africa on television. These images of children who needed medical care and who lived across the world prompted a desire to help. Chanel also has considered returning to New Haven so she could give something back to her community. "I want to work where the people need me," she says.

Chanel has a strong desire to fulfill her goals, realize her dream. Even her mother commented that Chanel always has been highly motivated. "I have the will and determination to get through it, and I will get through it. I want to become a pediatrician so much that I'm willing to stay," Chanel declares.

Program Impact:

Mrs. Lawrence feels that Chanel's participation in the Macy program not only has helped her academically but also personally. "She was able to get involved, do research, work in groups, and get one-on-one attention. [The program] helped Chanel to open up. She's a very shy person. It helped her to be more outgoing. She talks a lot more, gets more involved in people," says Mrs. Lawrence.

Chanel's mother says the program has also had a positive impact on the family. "It has enriched our conversations at dinner table," explains Mrs. Lawrence. "We're able to hear what she's doing and this has been a real motivation to her younger sister. She's an encouragement to [the younger children]."

Her teachers believe that Chanel has become more goal- directed toward medicine as a result of being in the program. Without the Macy program, she would not have taken the advanced courses and would not have been as well-prepared for college.

Chanel agrees. She has gained a better background in science and medicine. Yet being in the Macy program has meant more. It has taught her how to work in a group—how to include everyone, how to make sure everyone is involved, and how to share responsibilities. She says it has prepared her for college. She knows what to expect, thanks to her teachers and their discussions about college courses and college life in general. Finally, says Chanel, "It has taught me to work really hard for what I want and to really understand what I'm studying."

Analysis:

Again, the distinguishing factor in this case study seems to be the importance of group work. All four students interviewed mentioned how much they liked working with other students in groups. Group experiences, it appears, have fostered both assimilation and retention.

Chanel's case study offers the most insight into the programs' emphasis on group processes. She talks about group cohesion—including everyone; group tasks—making sure each member has a job; and group functions—sharing responsibilities. Previous case studies at this school, also illustrate the program's focus on cooperation, collaboration, and competition. For example, for first year students, such as Lila Thompson, it appears cooperation among members within the group is very important. They learn to help each other, rely on one another. For second year students, such as Ali Smith, collaboration is a key. Group discussions about teenage problems provide an opportunity for problem-solving. For third year students, such as Cecil Browning, in-class competition among groups is critical. It facilitates learning and lab work, and offers a chance for students to see what it's like in the "real world."

Case Study #21: Ramon Salgado

Student Profile:

Ramon Salgado, a Macy eleventh grader at a New York City high school, eagerly shares his feelings about school and life. He talks very fast and with a Spanish accent; his voice rises and falls, reflecting his enthusiasm and excitement. He seems very mature and independent. In fact, his aunt and legal guardian, Antonia Salgado, says he does not always tell her what he is up to; he just does it. She says he has always been active. According to Ms. Salgado, he spends his time at either school or church. And he has a lot of friends at both places.

At school, Ramon is struggling. His English teacher says that his performance varies depending on outside circumstances. At the end of the first semester, Ramon's average was a 69.5. His grades included 75 in physics, 85 in introduction to research, 55 in sequential math V, 75 in English, and 50 in American history. Absences for the first term totaled 3; last year he was absent 15 days and in ninth grade 11 days. Besides having difficulty separating school from problems at home, Ramon has a hard time expressing himself verbally, especially in writing, says one Macy teacher. "It's exciting to get things from him, to see how he thinks; but he's blocked in his expression by his lack of ability in writing in the English language," notes the instructor. As for Ramon's strengths, his teachers say he is very creative and original. "Once he develops an opinion, he stays committed to it. He commits himself to an idea and sees it through, thinks it through," adds an instructor.

Currently, according to a Macy staff member, Ramon is working on the third revision of a long essay concerning American appetites, which evolved out of classwork but, at this point, is being penned voluntarily. Besides his fascination with American culture, Ramon also is interested in photography. He has large stamp and coin collections and says he is an animal lover, too.

Ramon says people in his neighborhood do not pay a lot of attention to school. He lives with his guardian aunt, sisters, and stepbrothers. Evidently, Ms. Salgado has raised him and his sisters since they were very young children. The family is from San Juan. There, according to Ramon, his aunt attended school through the seventh grade; then, her mother became ill and she was the one chosen to stay home and take care of the house, mother, and sixteen brothers and sisters. Ms. Salgado has taken a few courses at a local community college and is very proud of her accomplishments in these classes. The family's first language is Spanish.

Program Entry:

Ramon's interest in his high school began when he accompanied his older stepbrother to track practice. Apparently his stepbrother graduated from the school. Ramon says he applied to three schools, and he was accepted only into the regular program and the Macy program at his current high school. Neither he nor his aunt mentioned receiving a letter about the program. Mrs. Salgado said that all she recalls is that not everyone can be in the program. At the time, Ramon says he didn't even know what the Macy program was about; he only knew it had something to do with medicine; and since he wanted to go into this field, he decided to enter.

Assimilation:

"...I came here and I found out what it was all about, and I was shocked. I wasn't expecting it [to be] like that," says Ramon. He says he was not really prepared in junior high school; he did not spend a lot of time studying. He adds, "I had this image of high school...I thought it was all freedom, do what you want to, come to class when you wanted—not that I was going to cut but that's how it's shown—another big place where you have all this freedom. I didn't think it was going to be hard..." Now as a junior, Ramon has a different view. When he visits junior highs to talk to eighth graders about high school and the Macy program, he tells them, "You have two choices. Either you go the easy way and get through high school and not get what you really need to fight out there and later on not be able to cope with college. Or you do it the hard way and work yourself up and prepare yourself for college and make sure you have the material and the strength to make it through college." He explains further, "...Everybody strives for big dreams. But it's not enough to strive or dream, you got to work at it. They're [Macy staff] going to make you work for your dream..."

Ramon's idea of what is expected of him extends beyond his own performance to what he can do for future Macy kids. "I have a big responsibility being part of this program...I have my responsibility to do my work for my own glory, my own joy, but I also have to remember that how I break ground [will] affect those Macy students on down the line. We're the beginning ones; we're the third Macy class. We're going to have to open ground..."

Ramon's perceptions of the expectations and hard work in the Macy program suggest that he has developed strong identification with the program. In addition, although he did not recall any specific experiences, the support from Macy counselors and his many friendships with classmates have made him feel a part of the Macy program.

To a large extent, the differences Ramon sees between Macy and the regular program pertain to his perceptions of his Macy peers. He says that Macy teachers are not different; the students are. "Because we are willing to learn...and we are willing to apply ourselves, I think to

them, it's a challenge. I see teachers try to do what they do with us with other kids and they see it, but they don't want to learn it," he explains.

Ramon feels a strong commitment to the program and his peers, yet this commitment is not reflected in his academic performance. For one thing, he says he has trouble balancing all the demands of his classes. "Right now I'm in a very shaky position overall because sometimes you have to take time from one subject to apply yourself in another; and you always have to keep them balanced," he says. Also, there are evidently problems outside of school that command a great deal of his energy. Although neither Ramon nor his aunt elaborated on this, Mrs. Salgado seemed supportive of her nephew's participation in the Macy program. She thinks it is a very good program.

Retention:

"Here they give you a lot of opportunities," says Ramon, "if you can't make it this way, they'll help you make it another way." Ramon sees his teachers and Macy staff as being understanding and helpful. They push him. His physics teacher, in particular, exerts significant influence. "He can be the sweetest person outside [the classroom] but inside that room he is [focused on] teaching and he makes everything so challenging that if you don't apply yourself in his class, you'll be lost," he states. Interestingly, Ramon is passing physics with a grade of 75.

In addition, Ramon recounted that when he had to take summer school to stay in the Macy program, his counselor kept calling him to see how he was doing. Also, he said just before he had to take his Regents test that summer, a classmate called and offered to meet him at the library to make sure he learned the material.

Ramon says the Macy students are a family. They go out together; they "raid" the library together. Apparently, they have a lot of fun. His friends outside the program, however, look down on Macy. Ramon says they are not taking school seriously and that some of them are just jealous. He, in contrast, takes school very seriously. "Nobody is going to give you anything," says Ramon. "You have to work at it. You get what you work for, and whatever you do and wherever you are and whatever class is the hardest, you have to try to be the best—especially when you are a minority and when you are not looked upon as being too bright..."

According to one Macy teacher, Ramon stays in the program because he not only has the ambition to be successful academically, but he also has a belief in himself. "...Despite the onslaught of many outside problems," states the instructor, "he still has a good sense of self and is still hanging on there."

At home, Ms. Salgado encourages Ramon. She tells him, "You have to study; you have to study. It's going to help you in the future when you go to college." Though she does not know many of Ramon's friends, she does attend parent-teacher meetings and says the teachers always have good things to say about Ramon.

Besides Ramon's aunt, other family members also have had an influence on him. His stepbrother, it appears, serves as a negative role model. Ramon says that even though he received an athletic scholarship to college, he was not prepared for it. His grandfather, on the other hand, offers a positive role model, according to Ms. Salgado. She says that Ramon always has looked up to her father. While he never went to school, he was very smart and he liked to help people. Everyone, she says, came to him for advice. Ramon wants to be like his grandfather so he can show his father that he, too, has something to give other people.

As for his future, Ramon's dream is to make it through the Macy program and into college. While he is thinking about applying to two very competitive New York universities, he knows he may not have the grades to be admitted. And because of family finances, he also realizes that he will have to fund his college education; but he appears optimistic. After college, he hopes to attend medical school and become a doctor. He says he wants to come back and help others make it.

"My family [has had] a terrible struggle," explains Ramon. "I'm coming back...if you could make it out there and help somebody not to have the struggle I've had to go through and not to miss the things I have had to miss, I think you have accomplished something."

Program Impact:

Ramon says that he has learned a lot through his experiences in the Macy program. For example, after attending a study skills workshop on the campus of a prestigious out-of-state university, he learned how to make better use of the time he was spending on his school work. "Everything I know now I learned from the Macy program. I came to the program with no tools at all and I have tools now," he states.

The Macy program has also given him a reason to make it. "I realize I have a really bright future," he says, "and I'm sure I have the tools I need to make it." It has also made him more responsible, more understanding of the world. "[It has shown] me that if I'm good at something, I have to come back and help other people who are struggling," he comments.

Besides having an impact on Ramon, his participation also has affected his home life. He says he makes his sisters do their homework, and he helps them if they need it. He adds that the family has become much closer since he has been in the program.

According to a Macy staff member, the counseling component of the program has helped Ramon tremen-

dously. The instructor says, "This is a kid, who in the New York City system, without the added help from the Macy program, I'm almost certain, would have fallen through the cracks by now."

Yet, the teacher's final comment offers a more poignant observation about the Macy program's overall impact: "He's not unique in the program. You have some kids who would do well under any circumstances, but you have a significant number who thrive because the support system keeps them from dropping all the way down. They get low and they get caught and they lift themselves back up."

Case Study #22: Rhona Douglas

Student Profile:

Rhona Douglas is bright, talented, and anxious to get on with life. An eleventh grade African-American student in the Macy program at a New York City high school, she does not miss a beat. She speaks confidently about her past accomplishments and her future plans.

A Macy English teacher says Rhona is well-read, literate, and informed. "She'll pursue something systematically until she gets it," he says. She likes being the star of the class. And she has had plenty of opportunity to enjoy the center stage, it appears.

As a delegate to the Hugh O'Brian Youth Leadership Foundation, Rhona was a participant in a program that took her to Washington, D.C. for a week of government and leadership training. She also has received an annual scholarship to a selective summer program for minority students interested in science and technology. She has received her school's Academic Scholarship Award and works as an office aide in the English department.

Academically, Rhona is doing very well. After the first semester, she has a 90.6 grade average. She earned a 97 in chemistry I, 98 in advanced math I, 93 in English 5, and 93 in American history. Her transcript shows only one absence in the last three years.

Rhona's accomplishments reads like a listing in Who's Who and, in fact, she is a member of the Society of Distinguished American High School Students. Yet, there seems to be something missing. Rhona did not talk a lot about her friends. According to one Macy teacher, while she is a very talented kid, some of her classmates do not respond positively to her. The teacher has observed that, at times, she tries to project an elevated status among her peers. She contributes to class in a positive and creative way when she is up to it; her participation is not consistent. Macy staff members are aware that there is a lot of tension at her home and wonder if this might contribute to the behavior they have observed at school.

Rhona, who turned 16 in April, lives with her mother. She has no siblings. Her parents have recently separated and are seeking a divorce. Rhona did not mention her home situation. The only information she shared about her family was that her mother works as a registered nurse, that she was born in the West Indies, and that she received her medical training abroad. Her first language is English.

Program Entry:

In the eighth grade, Rhona read about the Macy program in the bulletin of high school programs. She was considering a career in medicine—even wanted to become a doctor—so she applied and was accepted. She entered the Macy program as a freshman. Rhona did not mention attending an orientation session, nor did she elaborate on the selection process.

Assimilation:

Other than knowing the Macy program was targeted for students interested in the medical sciences, Rhona did not mention any other expectations. She says, however, that if she were advising others on entering the Macy program , she would tell them, "If you're ready for the work, it's worth it."

For Rhona, the summer programs, the teachers, and hard work have helped her establish a strong identification and bond with the Macy program. She says the exclusive summer program, in particular, was a learning and social experience. "It helped me grow up a lot because you're away from home, doing for yourself," she explains.

If she had been in the regular classes, she realizes these experiences and others would not have been available to her. As it is, most of her friends leave at 2:15 p.m. while she stays until 3:15 p.m. Rhona notes other differences between the Macy and the regular program at her high school. She says, "The courses are more intense. They go a little further. Especially in science class, you can see that a lot." In chemistry, for example, she says there are extra questions on tests for the Macy students to answer, and she can see that they are harder and cover different material.

In addition, she says there is more discussion in her Macy classes. Instead of listening and taking notes, the teacher is more likely to start class with a statement and then have students share their ideas. Problem solving and critical thinking are also a major part of Macy classes, she says.

Macy teachers, says Rhona, seem to care more about their students. "If they see you have a problem, they'll stop and ask what's wrong," she explains. Her Macy teachers also talk about college. "They'll tell you about his particular college if they've been there and they saw something they like. They'll try to let you in on their experience since they've already been there," says Rhona. One teacher, in fact, gives Macy students freshman college work just to see if they can do it, she notes.

Perhaps the biggest difference for Rhona is that in regular courses, she says, "I could sleep through the classes and still come out with good grades." As a Macy student, however, she explains, "You have to pay attention in class, do homework when you get home, study, and put your social life on the back burner."

Besides giving up time for friends, Rhona also has passed up joining the track team. "Track team practice takes so much out of you," she says. "I didn't want to really try and then fail to balance track with school work." Apparently, the issue of balance for Rhona is not one of managing her commitment to school, outside activities, and home, but one of juggling her academic responsibilities. And her mother apparently supports her efforts.

Retention:

It appears Rhona has a clear sense of direction, and she knows she has to perform well academically to accomplish her goals. For Rhona, this means establishing school work and grades as a priority. She says, "I think when it comes down to it, it's your grades that count."

Yet, it seems that she can see beyond her immediate academic achievement. She explains, "[It's like] when you look out on the skyline, you can see the buildings; but behind them you can see the sun. My grades are the buildings, but beyond I can still see a good career and my college and all that kind of stuff."

Currently, Rhona is considering a university in Washington, D.C. While she was at first considering a career in medicine, she is now more interested in government as a result of the leadership training experience. And although her mother may not know very much about college, she wants Rhona to attend. "It really doesn't matter where I go," she notes, "as long as I go."

Encouragement from her aunts and uncles also has kept Rhona focused. They are proud of her accomplishments and aspirations. "When I wanted to be a doctor, they said, 'This is the future doctor in the family.' And when I used to go over to my aunt's house, she'd take me to church and say, 'this is my niece,' and stuff like that. That was encouragement enough," notes Rhona.

In addition, the Macy staff have had an influence on Rhona. She sees them as supportive, concerned, caring, and informed. Not only do they communicate their high expectations of individual students, they also instill a spirit of cooperation among students. Rhona says the program coordinator "encourages us to help each other instead of us going to a teacher."

Because students depend on one another, it seems the peer support network is fairly strong at Rhona's school. Still, Rhona did not mention any specific friends in the program; most of her friends she says are not in the Macy program. Yet they do not tease her about being a nerd or being in the Macy program.

Her perceptions about her behavior and attitude, in light of what one Macy teacher shared, provide an interesting contrast. She says her non-Macy friends do not really think anything about her being in the program. "I guess it's the type of person you are because some kids might show off. But I don't, so I guess it's like another program in school and they don't mind," she comments.

Program Impact:

One Macy teacher believes the program has given Rhona "the chance to be exactly who she wants to be." Academically, she has been pushed. She has reaped the rewards of a challenging curriculum. This teacher feels this would not have happened without Macy.

In addition, Rhona feels that because of her accomplishments as a Macy student, she not only has been selected for special programs and awards but that her future looks a little brighter. She is hoping that she will be able to go to the college of her choice.

Perhaps most striking, however, is Rhona's perception of how she has changed as a person. As a result of being in the Macy program, Rhona believes she has become more sensitive to the needs of others. "When I was in junior high, I felt more like I'm here for me and I'm the only one I'm going to help out in school. I guess I was more or less in school for myself. I had my friends...but I didn't care if anybody else had a problem because I was there to get ahead," says Rhona.

Case Study #23: Shawna Dalton

Student Profile:

A senior in the Macy program at a high school in New York, Shawna Dalton, at 18, has probably seen a few more challenges than most girls her age. Her sophomore year, she became pregnant and had a son. Yet, she managed to stay in school, and her academic accomplishments are quite impressive.

Currently she ranks number 4 out of her class of 467 students. Her total average is 90.0. For the first semester, she earned an 85 in advanced biology, 97 in chemistry I, 90 in advanced math I, 90 in English 7, and 90 in economics. She also takes calculus and sociology at nearby Lehman College. While Shawna had 18 absences her sophomore year and 11 last year, she had only 1 after the first term this year.

An English teacher says Shawna is one of the brighter students in her class. "She will ask questions; a lot of students just take in information. ...you can see her brain moving up and down...she has thought it out. She is a very active learner," reports the instructor.

In addition, the English teacher sees Shawna as being more mature, thoughtful, and philosophical than other students her age. She is able to make connections from one subject to another, from things outside of school to what is going on in class. Though she has a very inquiring mind and she's a deep thinker, she sometimes misses the obvious says the instructor. And while she is quite verbal and responsive, occasionally Shawna gets caught up in her ideas; at these times, notes the instructor, her mind "works faster than her mouth."

At her high school, Shawna is an Arista (the National Honor Society). She also tutors and has participated in church activities. This past year she was involved in a successful local caucus campaign for a district attorney candidate. After working at McDonalds to earn some extra money, she got a job as a Macy student aide last summer.

This last year has been difficult for Shawna. Mrs. Dalton moved to Maryland with Shawna's son in November. Since then, Shawna has lived with several friends; at present she is living with an elderly aunt. According to the English instructor, Shawna has had a difficult time adjusting to her aunt's household. For instance, Shawna says she will come in and turn the lights off when she is trying to study. Shawna has one brother (age 19) and a sister (age 12). Her ethnic background is African-American. Mrs. Dalton was born in Antiqua; she speaks English as a first language. Shawna says she works as a secretary. Mr. Dalton is a warehouse manager in New Jersey. Shawna did not share much information about her family.

Program Entry:

Shawna entered the Macy program in her sophomore year. She had read about different programs in the high school bulletin, and since she knew she was interested in becoming a doctor, she thought the Macy program would be a good choice. The summer before entering the program, she attended an orientation session which focused on math and science.

Assimilation:

Because the Macy program emphasizes science and math, Shawna says she expected that they would be associated with a hospital. She was surprised to learn differently, and she thinks that a practicum in a hospital would be a valuable addition to the program.

As a senior, she would tell other students interested in the program that it can open up a lot of opportunities for summer enrichment and other activities. Shawna, for example has attended Cooper Union to study engineering.

The Cooper Union program, college courses, group discussions and rap sessions, and support from guidance counselors have all provided a sense of identification and made Shawna feel a part of the Macy program. Also, the higher expectations from teachers fosters identification and helps Shawna differentiate between the Macy program and the regular classes. To Shawna, the Macy program operates on a different level than the regular program. She says more is expected of Macy students; they have more classes.

Even with the courses at Lehman College and a fairly rigorous schedule at her high school, Shawna seems to be keeping her commitments in balance. With her mother's move in November, she probably does not have a lot of family or home responsibilities. She does have a lot of friends, both in and out of the Macy program; yet she still manages to maintain her high academic performance.

And while her mother may not know a lot about the Macy program or verbalize her support, Shawna feels she supports her – in whatever she chooses to do. In addition, Macy staff members have demonstrated their concern and encouragement; and this has helped Shawna feel a part of the program.

Retention:

During her sophomore year, Shawna says there was the possibility that she could not continue the program. According to the Macy coordinator, this was another difficult time for Shawna. First, she had to deal with

becoming a mother, and then she had to find child care for her newborn son. Macy staff helped her pull through, says the coordinator.

Because of this support, Shawna has a lot of respect for the coordinator. "She thinks of doing things and just goes ahead and does it," says Shawna. Over the years, Shawna says she has learned that she can talk to the coordinator and depend on her for guidance and direction. "It's nice," she says, "she encourages us to make up our minds and do it." This is not true, however, for all of her teachers. For instance, she says last year it was very hard to talk to some of the teachers.

Of her Macy classmates, Shawna says that they are like a family. They have known each other for years, traveled together, and she feels very comfortable with them. But, she says, like a family, "some are black sheep and some are welcome members." Still they work together on problems and help each other study in the morning and after school.

Non-Macy students have a different attitude toward the Macy program . Shawna says, "Some of them just think Macy students are nerds." Others see Macy students as competing with honors students. Shawna explains that in September when they learned their class ranks, a non-Macy friend of hers remarked that she was glad an honors student, rather than a Macy student, was number one. Shawna says proudly now the situation is reversed and a Macy student has taken the top spot.

According to Shawna the one thing that keeps her going is her son. "What would I do if I can't go on? If I don't succeed with what I want to do, what kind of example would I be for him? I have to be an example myself so he sees it can be done...that it's possible," she explains.

As for the future, Shawna definitely plans on attending college. She has been accepted by a number of competitive colleges, including The Johns Hopkins University. She also is considering Haverford and Wesley. Beyond college, she wants to become a doctor, a dream that she has had since she was five years old.

Program Impact:

Although Shawna has had to give up being with her son and family to stay in the Macy program , she thinks the sacrifices have been worth it. A big payoff she says is that she has been accepted to some of the most competitive colleges. She also says she has enjoyed the three years she has been in the Macy program . "When you're doing something," she remarks, "you don't realize what you're doing. But when you look back on it, you see how well you've done and the things you got out of it."

The English teacher believes that, as a Macy student, Shawna received a lot of support she would not have otherwise. "It enabled her to stay in school and stay on an academic track," says the teacher. "My feeling is that would not have happened if she were not in the Macy program. She would have done all those things that were attendant on having a child at that age. She probably would have gone by the wayside."

Case Study #24: Sarimah Naieem

Student Profile:

Content and pleasant, Sarimah Naieem, a twelfth grader in the Macy program at a high school in New York City, seems at ease with life. Draped in traditional Islamic dress and turban, she talks about her religion. There is a softness in her face and a touch of laughter in her voice. She appears to be happy with what she is doing in school and where she is at the moment.

A Macy English teacher says Sarimah seems to have more of a sense of where she is going than other students. "She's very organized in what she does. She knows how to proceed from point A to point B, unlike many students who wander all over the place," says the instructor. This clear sense of direction carries over to her writing, yet the teacher says Sarimah occasionally needs to be pushed. She does not always get her work in on time or volunteer during class discussions.

As of first semester, Sarimah ranked in the top 12 percent of her senior class. Her fall term grades included an 85 in advanced biology, 85 in chemistry I, 80 in Regents English and 55 in English 7, 65 in French, and 75 in economics. At the end of first term, she had one absence. According to the English teacher, Sarimah falls in to a group of students who tend to put more emphasis and energy into their science courses. They feel English is easy, says the instructor, and they are content with their performance, even though they may not be working as hard as they could be.

Sarimah has a variety of interests outside of class. She has been a big sister to a freshman this year. She lectures on her religion and the role of young women in Islam. She likes to visit mosques. And every Sunday, she tries to jog two miles.

She lives with her mother and younger sister. Mrs. Naieem was born in Cairo, Georgia. The family speaks English as a first language. Sarimah's ethnic background is African-American. No mention was made of her mother's work or education, or of Sarimah's father.

Program Entry:

Sarimah says the Macy program caught her attention when she read about the different programs in the high school bulletin. She entered the program when she came to her current school in the tenth grade. She remembers taking a test when she first arrived at the school, but does not recall other any other details of selection or entry.

Assimilation:

Sarimah says when she first started the Macy program , she was surprised. "In junior high you never have to study and you get 90's. But I learned I would have to study for this stuff, and I told myself I might as well get use to it," she explains.

If Sarimah were advising eighth graders on what to expect in the Macy program, she would tell them it is a good program. "It prepares you a lot for college. It gives you courses so you just won't get the degree. You get a little bit more," she notes.

One Macy course that Sarimah especially liked was anatomy and physiology. She says the class was "hard, but fun." Her teacher made the students look up the answers to their questions rather than providing the information himself. This made Sarimah feel as though she worked for what she learned. In fact, she believes most Macy seniors would say that this was their favorite class. Challenging classwork and special relationships with staff members such as the program coordinator have fostered a strong identification with the Macy program for Sarimah.

As for differences between Macy and regular classes, Sarimah feels material is covered at a faster pace in Macy classes. Field trips, special projects, such as the case studies in anatomy and physiology, and extra questions on tests set Macy classes apart, too.

While Sarimah does not see any differences between the way teachers teach their Macy and regular classes, she does see in a difference in Macy and regular students. "I don't want to sound prejudiced or anything, but I think we're just a little bit smarter because we take Regents and other classes. We have to work harder. We have to maintain an 85 average," she says.

At present, Sarimah seems to have limited her commitments. She has chosen not to work or play a sport. And it does not appear that her home life or social activities interfere with her academic responsibilities. If there is any lack of balance at all, it is probably in the effort she allots for her specific classes, as indicated by her first semester grades in English, French, and economics.

A strong base of teacher and parent support also facilitates Sarimah's sense of belonging. She says the Macy teachers are always available—always there to lean on. In addition, Mrs. Naieem is supportive of Sarimah's participation in the Macy program . In fact, Sarimah says she knows a lot about the Macy program and she hopes it is still offered when her younger sister goes to high school.

Retention:

Mrs. Naleem not only supports Sarimah, she also is actively involved in her daughter's education and provides a strong sense of direction. Sarimah says she is always at school. And according to one teacher, Mrs. Naleem appears to be the sort of parent who knows what she wants her child to be and do.

Sarimah says her mother is a role model and source of motivation. "It doesn't matter how mad she is at me, she's always smiling and gives me that extra push. She tells me I better study, better study," says Sarimah.

Besides encouragement and direction from home, Sarimah also finds a strong network of support among staff and peers at school. "The teachers and the students, we're with each other all day. Sometimes we get frustrated, but there's someone to help you. And we help each other. Then there are teachers like [the program coordinator and guidance counselor]—all the Macy teachers—they're always there for you to lean on and help you if you need it," she explains.

In addition, Sarimah's strong inner drive helps her to succeed. She says she will not leave the classroom until she knows she understands the material. And she spends about five hours a night studying; again she will not go to bed until she makes sure she "has the information straight." Sarimah says her motivation to succeed comes from knowing that if she slacks off now, this will show in her records. "I want to be good step by step, all the way. I don't want to end up failing and saying I could have been good, could have been there...," she explains.

Though her focus is on doing well today, Sarimah also has a clear idea about what she wants to do in the future. College is first. She has been accepted to several in-state universities. After college, she hopes to go to medical school and become a pediatrician.

Program Impact:

Sarimah's English teacher believes Macy has contributed to Sarimah's sense of direction, that she has become more focused. If she had not been in the program, the instructor doubts that Sarimah would have been as purposeful or goal-directed.

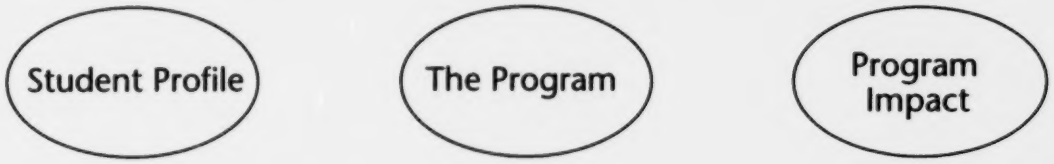
Sarimah feels that the Macy program has helped her become more mature and look at her future more seriously. She says, "I know it's going to be hard....I always had the thought that I would breeze right through it, but then I realized that it's going to be hard and I just have to study."

Case Study Cross Analysis

This cross-analysis presents an overview of the twenty-four case studies included in this report. While the individual case studies are rich in detail, this analysis focuses more on common trends and patterns found at all six sites, within one school, and/or across one grade level or specific group of students. Occasionally, specific variations are noted to provide a more complete picture.

While calculations and rough estimations are provided in a few instances, it is not the purpose of this report to provide hard statistics. Instead, this analysis and the twenty-four case studies offer a unique opportunity to view the people, experiences, and impact of the Macy programs first through a wide angle lens and then through a tightly focused zoom lens.

Framework For Analyzing Student Interviews



- Who is he/she?
- What does he/she bring to program?

- What are the significant experiences for the student?
- What are the student's perceptions of the program?
- What do others have to say about the student's participation?

- How has the student changed as a result of the program?
- What are the student's perceptions about these changes?
- What do others say about the changes?

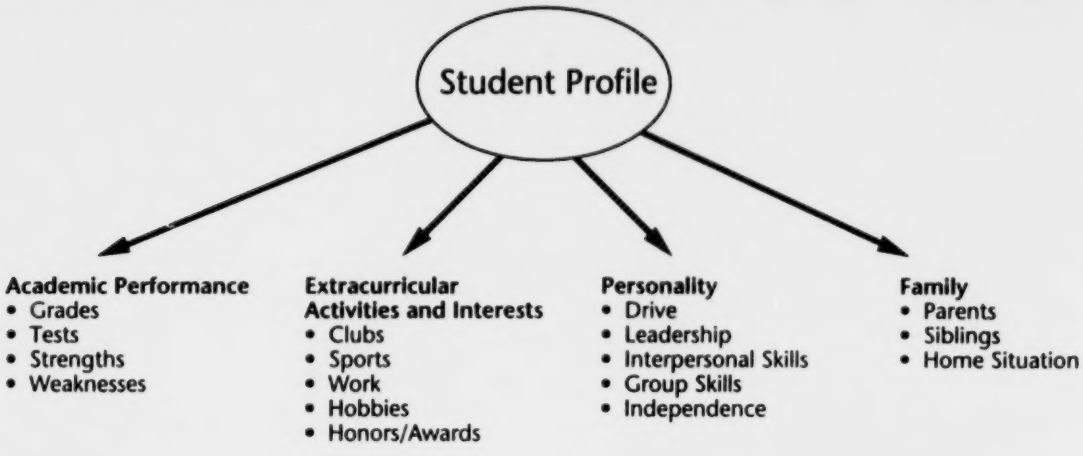
Student Profiles

Who are the 24 Macy students represented in the case studies? The student profiles offer first a look at the student as a person. What makes this adolescent tick? What seems to be the essence of his/her personality? What might catch one's attention upon first meeting this individual? Second, the profiles provide a sketch of the student in class and outside of school, briefly describing academic performance, extracurricular activities, honors, and interests. Finally, they share pertinent information about the students' families.

It seems important to note that these case studies provide momentary glimpses of who the students are now—at the time of the interview. In this way, the studies are like an album with single photographs: sometimes they spark a few clues to the students' lives prior to entering Macy, but, for the most part, they profile the individuals the students have become.

Another consideration worth noting is that the case studies may very well offer a look at the students at their "best." Perhaps it is just human nature for one to put his best foot forward. The Macy students interviewed made lasting and very positive first impressions. The one-on-one, hour long interviews gave them a chance to talk about themselves, their ideas, feelings, and achievements. The spotlight was clearly on them, and this in itself may encourage a "halo effect."

In addition, it would not be unreasonable for the schools to want to put their best "feet" forward, too. It makes sense that students selected for the interviews would most likely be those that were more verbal, personable, and academically successful. After the first three school visits, however, school staff were asked to choose at least one student who seemed to be struggling in the program, one who was having real trouble meeting the demands of courses. While interviewing these students



was more difficult, they provided valuable information about the conflict and challenges some Macy students face and the decisions they make.

Personality

For the most part, the 24 Macy students in this study are friendly, out-going, personable, and often, charming. Most are extremely verbal and a few very articulate. The majority of their teachers report that they get along well with others and that they work well within group settings. Only a handful of students come across as being quiet, reserved; and only one student is reported to have any problems with fellow classmates.

Both teachers and parents note their independence. These students, in general, think for themselves; they are not easily influenced by others. Several are described as being outspoken, and one, in particular, is most candid about her impressions of Macy staff. Macy teachers also say they are innovative and creative. Parents speak of their ability to solve problems at home. The students, in general, communicate confidence and seem to possess high levels of self-esteem.

Teachers also comment on their sense of direction, their ability to persevere, survive, and even thrive in adverse situations.

Academic Performance

Overall academic performance of these 24 Macy students is above average. Most grade averages fall into the B range. Extremes of academic performance include three students who are struggling to maintain low C averages and several who rank in the top 10 students of their junior and senior classes. The majority of the Macy students profiled are in the top 15 to 20 percent of their total high school class.

For the handful of students who appear to be struggling with their courses, teachers report a number of concerns: erratic performance and problems in completing assignments promptly; verbal skills, especially in terms of vocabulary development and writing; and a lack of focus, perhaps as a result of being spread too thin with too many commitments. At least, twenty percent of the teachers believe their students have the ability to do better. Yet, some Macy teachers see their students as intense and even overachieving. These teachers express concern that their students are too serious and that perhaps they are missing out on the fun of youth and the normal teen social scene.

Academic strengths, on the other hand, include strong motivation, the ability to see connections across subject areas, and the desire to seek clarification and ask questions when confused. Teachers note that their Macy students are usually very hard on themselves and that they are willing to revise a paper, retake a test, and try again for a better mark. Most of the Macy students are seen as being organized, prepared for class, hard working, and conscientious. Macy students, for the most part, seek challenges; staff members see them as active, engaged learners.

As for school attendance, Macy students seem to have few problems. Twenty report fewer than five absences for the first semester. At least five have perfect attendance records so far. One student, in fact, has missed only one day in the last three years. No student reported more than ten absences for the first half of the year.

Extracurricular Activities, Honors, and Interests

Macy students are involved in a number of school, community, and church-related activities. Several are members of the National Honor Society. Others are members of clubs that promote a strong ethnic identity, such as Aspira, the African American Club, or social/service organizations. In addition, Macy students contribute to school publications, serve as peer tutors and office aides, and are active in peer counseling and support programs.

Macy students have earned many leadership, scholarship, and athletic awards. They serve as class officers and student council representatives. One is a Prom King; another a cheerleader. Many play on school athletic teams, and at least two have earned all-district recognition.

They also fulfill a variety of commitments outside of school. At least two are public speakers. Three reported having part-time jobs—at a hospital, public library, and as a messenger. Many shoulder a lot of responsibility at home.

Several students volunteer their time to worthy community projects, such as preserving a neighborhood park, working in a hospital pediatrics ward, or serving on a community advisory council to explore recreational options for youth.

Their interests range from music of the big band era to stuffed animal collections, from roller skating to drawing, and photography to reading.

Family and Home Life

Over half of these 24 students come from single parent homes. An additional three are living with a guardian. Only seven report living with both parents. Sixteen have at least two siblings; only two have no brothers or sisters. One student has a child. For the most part, these Macy students are products of single parent homes and large families.

In addition, for the majority of students, the parent's education does not exceed the high school level. Four said their parent had not finished high school; while ten noted one parent had attended some college. Four students reported their parent spoke English as a second language. About one third of the parents worked in clerical or non-professional positions. Only seven parents held jobs requiring professional training.

Nearly all of the Macy students appeared to be very close to their immediate and often, extended families. While four students come from what may be considered dysfunctional situations, most appeared to be coping with whatever challenges and disruptions they might be facing at home.

The Program

Although the structure and focus of Macy programs vary from school to school, it appears students experience the program in much the same way. Looking at how they enter the program, how they become a part of it, and what keeps them in the Macy program provides a framework for better understanding these experiences.

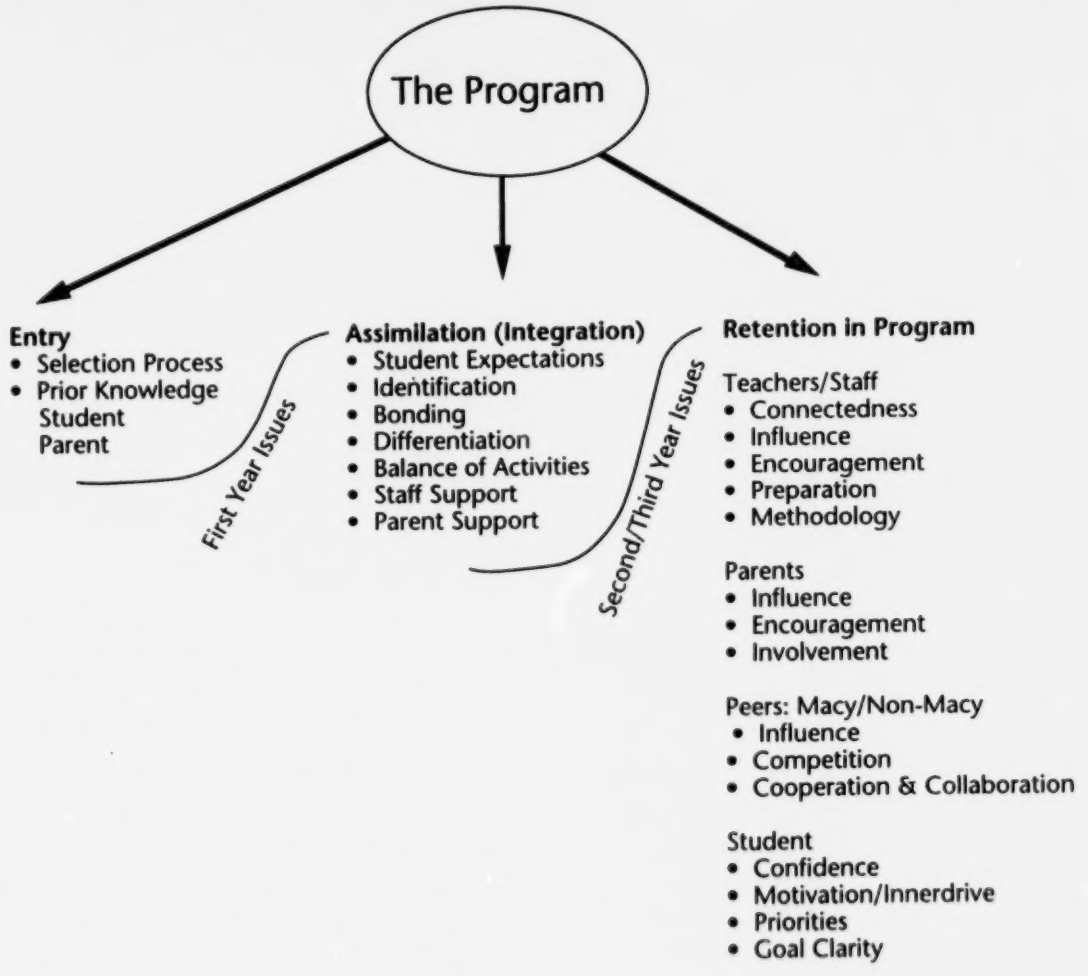
Entry

The ways of entering the program are different from site to site. Across all six sites, however, there seems to be a strong perception among parents and students that students are "selected" to be in the program. This perception is perhaps most prevalent at Holt High School in Alabama, where students believe tracking begins as early as seventh grade. On the other hand, for the first class of Macy students at Tuba City High in Arizona, entry was based almost completely on student interest and desire. This has changed over the past few years and now Macy staff at Tuba City, as staff at other Macy sites, employ some method of screening. Teacher recommendations and academic performance in junior high are perceived to be two of the more widely used screening criteria for the program.

Most students recall receiving notification about the program before beginning the ninth grade. Their knowledge of the Macy program at that time varies. In New York, for example, students read about the Macy program in the directory of high school programs. For the most part, though, students hear about the program from upperclassmen, junior high school teachers, and even older brothers, sisters, or cousins who have been in the program. Parents learn about the program primarily from their children, teachers, and other parents. One parent recalls hearing about it at work.

The information they receive from these sources is limited and differs from school to school. At Hillhouse, for example, students hear that they will have to take an extra class but that it is worthwhile; at Holt, they know they will have to work harder and give up some electives but their efforts will get them into a better college. At Barton, there is an emphasis on maintaining an 85 average to stay in the program. And at Tuba City, there is the lure of field trips, college visits, and summer enrichment programs. Most students and parents know, however, the program prepares students for college and a career in the medical sciences.

Besides hearing about the program from others, students and parents also receive "official" information from staff. Letters, orientation meetings, and slide presentations often provide the first exposure to the Macy program.



Assimilation

A number of factors determine the extent to which a student feels a genuine part of the Macy Program at his or her school. Although some students have difficulty articulating their expectations about the program, and some say they did not know what to expect, their comments about what they would tell future Macy students are positive and suggest they feel their participation has been very worthwhile.

Again, expectations, as prior knowledge, vary from one site to another and even from one class to the next. Most students believe participation in the Macy program results in better preparation for college. In addition, they believe they will receive more personal attention because the classes are smaller. And while the majority of students focus on what they hope to get from participating in the Macy program, a few individuals seem more concerned about what is expected of them as Macy students.

Significant experiences and relationships developed through the program also seem to play an important role in helping students feel a part of the program. Again, though there are differences among the schools, common threads are apparent. Field trips, college visits, group projects, special assignments, and summer camps are often mentioned. Yet, perhaps, the strongest bond created among students comes from knowing that they are working harder and, in many cases, being graded more strictly than their non-Macy peers.

Their perceptions of these and other differences also foster assimilation. For example, Macy students see their

Macy classes as being more rigorous, more demanding, and more challenging than their regular classes. Students note that there is usually more discussion in Macy classes. At Tuba City, one student even notes the arrangement of desks in a large circle rather than in traditional rows. And at Clinton, Macy students note that while the same tests are given to all classes, there are additional questions for Macy students that cover extra material.

Macy students generally perceive their teachers as caring individuals who are committed to their students. They say their Macy teachers encourage independence. Students find the answers themselves rather than relying on the teachers' expertise. In addition, the teachers of Macy classes may hold their students responsible for material assigned in a text, but not necessarily discussed in class.

There is also the perception that Macy teachers are more organized; there is a sense of focus and direction in their lessons. And they take time for individual differences in learning. If a student does not understand, for example, they stop and either try to help him/her understand or encourage other classmates to clarify the point. One student at Holt phrased a major difference aptly: "Macy teachers want to teach because they know their students want to learn."

This desire to learn is perhaps the most distinguishing difference between Macy and non-Macy students. For the most part, there is not a consensus among Macy students that they are brighter or smarter than their non-Macy peers. They do perceive themselves, however, to be more determined, harder working, more supportive of one another, and more focused on their school work and their future.

Another key factor of assimilation is balance or the ability to fulfill school, family, social, and other commitments. Because Macy students tend to be well-rounded and most are involved in a number of activities in and out of school, they sometimes feel pressure coming from a number of different fronts.

Some, particularly minority male students, feel the pull of their non-Macy friends. Others for whom the issue of balance seems critical are students who are involved in sports and/or who carry a lot of responsibility at home. Many in this situation soon learn there just are not enough hours in the day to do homework, help with chores, play on a school team, and hang around with friends, for example. Even if they manage to get by their first two years, when they hit the "wall" their junior year, and are faced with advanced courses, they learn they have to choose their commitments carefully.

The support of parents and teachers also plays an important part in fostering a student's sense of belonging. The parent's knowledge of the program enhances the student's identification with the Macy program. And when the parent sees the program in a positive light, the student is most likely to share this perception. In addition, when students feel Macy teachers and staff know them personally and acknowledge the importance of their participation, their identify with the program is strengthened.

Retention

The influence of teachers and parents extends beyond helping students feel a part of the program. A strong support network of teachers, parents, and peers also plays a vital role in the retention of Macy students. Teachers, for example, provide feedback, encouragement, direction, and information. Many students note that their Macy teachers not only offer praise for a job well done, but they also let them know, often in subtle ways, when there is a drop in performance.

In addition, students say their Macy teachers seem to sense when they might be having problems at home or with friends and they ask if everything is all right. Teachers often "reel troubled students back in," and encourage them to try harder. They communicate their confidence that the student can do better. And they try to keep parents informed through phone calls, notes, and conferences.

Macy teachers also influence students by providing important information and often instilling a strong sense of commitment and direction. Besides offering instruction that will benefit students as they take the PSAT, SAT, and even future college courses, many talk openly about their own experiences in college. They help Macy students see their future in concrete terms. In more than a few cases, Macy teachers have been instrumental in helping the students refine college and career goals and instilling a commitment to serve humanity, in general, and their people and communities, in particular, after they complete their professional training.

The varied teaching strategies used in Macy classes also appear to help students keep up their motivation. Their teaching methods often include opportunities for group work so that students can learn from one another. In addition, in many Macy classes, there seems to be an emphasis on inquiry and an environment where students become responsible for their learning. Macy students see teachers as learners, too, in that they do not always have all the answers but are eager to investigate. And in more than one instance, students refer to the teachers as "friends".

In general, the smaller classes allow Macy teachers to offer more one-on-one attention and a more personal relationship with the student. In addition, there seems to be a certain comradery among Macy teachers within the schools. At Barton, for example one teachers talks about working together on special projects that cross disciplines, as well as in areas such as vocabulary building and writing. Often, Macy teachers teach the same students at more than one grade level or for one more than one course. Field trips and other Macy activities offer the opportunity for students and teachers to interact outside the classroom.

According to several Macy teachers, it is harder for a student to "slip through the cracks" in the Macy program.

Parents, guardians, and other family members also exert tremendous influence on Macy youth to stay in the program. Besides offering verbal support, most seem to be actively involved in the students' education. The majority say they attend parent-teacher conferences regularly. Many also attend school and Macy parent meetings, and they know other kids in the program. Several know other Macy parents at the school, as well. A few parents are regarded as "fixtures" at the school. One parent, for example, is an avid volunteer.

Macy parents also convey important messages about school to their children. They see their children's education as a necessity and priority. They expect their children to go on to college. Several parents say they want their children to have more than they do, and they believe the Macy program is the key to a better job and a more prosperous lifestyle.

To some Macy parents, it is not enough to talk about the importance of school; they also push for higher grades, limit social activities, and make sure there is a quiet place to study. The predominant message they and other family members convey is one of confidence and encouragement. In several cases, grandparents, aunts, and uncles are particularly influential in motivating the Macy students. And some Macy students regard family members as role models by providing a clearer picture of what they hope to accomplish or what they want to avoid.

The influence of the student's peers is equally important to retention. On the one hand, students generally see their Macy peers as supportive and helpful. They like being with other students who want to learn and who share similar educational goals. At several schools, Macy students study together before and after school. They talk about a special bond that exists among the Macy students. Upper classmen, in particular, say they feel comfortable with their Macy classmates since they have been together for several years. More than a few students referred to the Macy students as a family. And several mention the friendships they formed during summer camp with Macy students from other schools.

On the other hand, several students note the competition that exists among Macy students. For the most part, this competition is limited to group projects within classes, such as at Hillhouse. Only a couple of students talk about competing with their Macy peers. Instead, there seems to be a spirit of cooperation and collaboration beneficial to everyone.

While Macy students seem to keep each other in the program, non-Macy peers sometimes threaten a student's retention. At each of the six sites, at least one student describes the ridicule Macy students often endure. At Tuba City, for example, Macy males are regarded as "school boys." At Barton, Macy females are called "goody, goodies" and "stuck up." At several schools, Macy students are considered "nerds." Interestingly, the chiding does not seem as strong at some schools as at others. For example, comments about name-calling are not as prevalent among Hillhouse and Randolph students.

Yet, at each of the six schools, minority males in the program seem most threatened by negative peer influence. First, they usually are discouraged from joining the program. For example, their peers wonder why they would want to spend time studying when they could be out playing ball or hanging around with the guys. Then, according to some Macy teachers, if one drops out of the program, he will usually try to "take a few others with him."

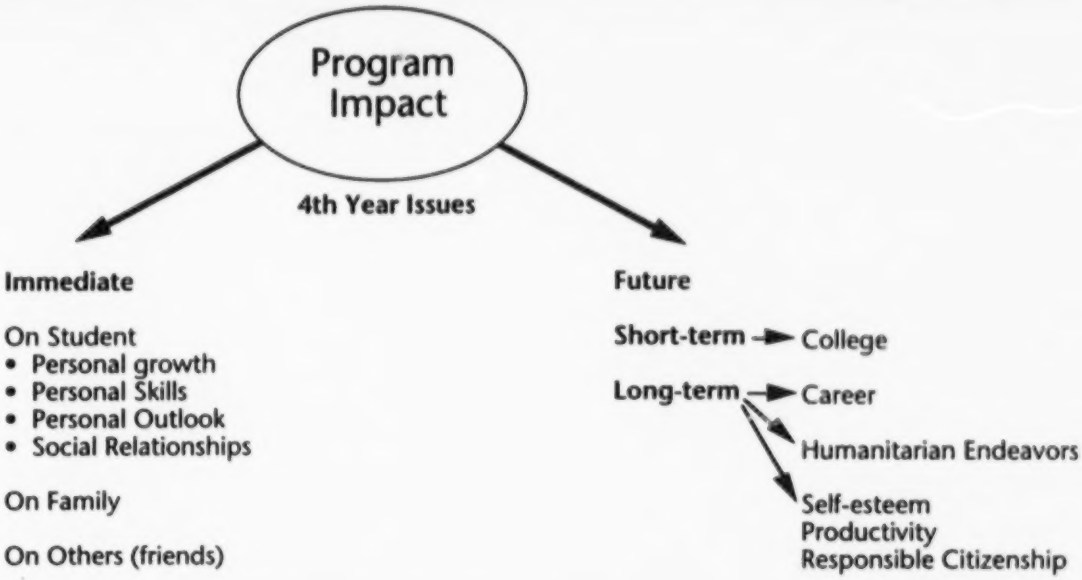
In such instances, it takes a strong individual to resist the pressure. And, in addition to a strong external support network, there appears to be certain internal student factors that are critical to a student staying in the Macy program. As mentioned earlier, Macy students seem to be highly motivated. They like a challenge. They appear to have a strong inner drive to succeed.

While some students may have trouble balancing their commitments, most agree that school comes first. For the most part, they realize to do well, they have to give up something, whether it is sports, hobbies, or a more active social life. A few students, however, have little interest in a life beyond school; they may spend ten to twelve hours a day attending school and doing homework. As mentioned earlier, this narrow focus causes concern among their parents and some teachers.

Macy students also tend to have a clear picture of their future. All express a desire to go on to college; and in the New York schools, it seems the goal is not just to attend any college but one that is competitive in terms of admissions. While several are still uncertain about career goals, most see themselves pursuing professional positions. In the three New York schools, the majority of students intend to study medicine with the hope of becoming doctors. Career interests at Holt, Tuba City, and Hillhouse are more diverse and include business, accounting, teaching, law, architecture, and engineering. Interestingly, six students expressed a desire to help their people and communities once they finish college, and four of these six students are Native Americans at Tuba City.

Program Impact

Participation in the Macy program affects students in a number of ways. Through their experiences and relationships, Macy students often change the way they perceive the present and the future. Some students, for instance, report that they see school in a different light. While they may have "played around" in junior high school and still received passing and even above average grades, they realize that, as Macy students, they must be more serious and committed to their school work.



One student, for example, says being in Macy his freshman year acted as a "reverse catalyst." His experiences and teachers helped him to become more focused and more calm. Other students say they have developed more positive attitudes toward school since being in the program. They look forward to going to school each morning; and in a few cases, the students' attendance records have improved.

Teachers, too, observe these changes. Some say that they have seen students become more confident, responsible, and determined as a result of being in the Macy program. Without the program, they say students run the risk of becoming disinterested in school, "losing the edge," and even "falling through the cracks."

In addition, teachers and parents report that Macy activities and summer enrichment programs have broadened students' horizons by increasing their awareness of other people and problems in the world. Both teachers and students note improvements in basic skills such as language and math as a result of these experiences. They also credit these activities with helping students develop skills such as applying the scientific method, working in labs, doing research, and contributing positively to group problem solving tasks.

The impact on the student's family is equally positive. Not only do some students learn to apply problem solving skills at home, but they also encourage younger siblings to do well in school and help them with their assignments. Macy activities often are the topic of discussion at the family dinner table. One parent even reports that her daughter's commitment to school is an inspiration to her as she pursues her college degree. In addition, Macy students' influence sometimes extends beyond the immediate family to have a positive impact on the neighborhood youth.

The only immediate drawbacks to participating in the Macy program concern limitations in scheduling and socializing. It appears that Macy students sometimes feel confined because of the additional course requirements. Some say they can not take as many electives as they would like. For others, being in the Macy program means giving up school sports and time with friends.

However, the impact on one's social life and friendships seems to be more positive than negative. Through the Macy program, students often make new friends at their high school and through the summer enrichment activities. Several students, for example, talked about corresponding with friends they met at workshops and camps. The friendships formed among Macy students seem to be based on shared academic interests and goals. Yet, there is a powerful synergism—they seem to empower one another, as well as others around them who are not in the program. Often, Macy students serve as positive role models for their non-Macy peers.

Macy students, their parents, and their teachers believe participation in the program means a better chance to attend college. Some teachers and students report that without the Macy program, the students would probably limit their options to technical schools or two-year institutions. The parents and teachers believe that the vocabulary development, PSAT/SAT workshops, advanced courses, and college counseling enhance the students' chances of acceptance by selective four-year institutions and also lead to academic scholarships. In addition, many students feel

that when they get to college, they will be better prepared because of their Macy background. And interestingly, upper-level Macy students, for the most part, looked forward to going off to college—they seem to greet this new challenge with eagerness rather than apprehension; they seem confident and ready to take this big step toward independence.

For some Macy students, participation in the program leads to more definite career goals. Several Macy students could actually see themselves as doctors; one could even hear her name being called over the hospital paging system. This ability to visualize, to project one's sights far off into the future is not necessarily shared by most adolescents, who seem more grounded in the "here and now" of everyday living.

Guest lecturers, research projects, lab experiences, patient simulations, and field trips often provide a real-life look at various career fields. As a result of such exposure, some Macy students may redefine their professional aspirations, while others further clarify college majors and career directions. Most importantly, these experiences, as well as discussions with Macy staff, offer a different picture of the future than what the student may see everyday in his own family situation and community.

Student Demographics

The fall 1988 enrollment in the six Macy high school programs totalled 3,104 students (Table 1.). A. Philip Randolph Campus High School (Randolph) had 438 students enrolled, making it the largest of the Macy programs operating at a single high school site. The other two New York City Macy high school programs, Clara Barton High School (Barton) and DeWitt Clinton High School (DeWitt Clinton) had 400 and 310 students enrolled, respectively. The James Hillhouse High School (Hillhouse) in New Haven, Connecticut had a total of 147 students enrolled in the Macy program. The Tuba City High School Macy program had 163 students enrolled. The University of Alabama programs had a total of 1,646 high school students enrolled in the 34 participating high schools in rural western Alabama. Some of the participating schools in Alabama have as many as 85 students enrolled in the Macy program; several of the smaller, rural high schools have as few as eight students enrolled.

Table 1.

Enrollment in Macy Programs
Fall 1988

	Fall 1988 Enrollment
Randolph	438
Barton	400
Clinton	310
Hillhouse	147
Tuba City	163
Alabama	1,646
TOTAL ENROLLMENT	**3,104**

Gender and Race/Ethnic Group Membership of Macy Students

In the fall 1988, females far outnumbered males by nearly a 2:1 margin in all of the Macy programs (Table 2.) except Alabama. At both Randolph and Barton, over three-quarters of the Macy student body were female. At DeWitt Clinton, Hillhouse, and Tuba City over two-thirds of the Macy students were female. The over representation of female students is less apparent in the Alabama schools, where slightly over half (58%) of the students enrolled in Macy programs were female.

Table 2.

Percent of Female and Male Students Enrolled in Macy Programs, Fall 1988

	Percent	
	Female	Male
Randolph	76%	24%
Barton	83%	17%
Clinton	63%	37%
Hillhouse	64%	36%
Tuba City	69%	31%
Alabama	58%	42%
TOTAL	**67%**	**33%**

The original intent of the Macy Foundation was to provide support to high school programs serving economically and educationally disadvantaged minority students. Analysis of the demographic profiles of Macy students in each of the six programs suggests that this goal of serving disadvantage minority students has been largely achieved. African American students make up the large majority of Macy students in the three New York City programs, and at Hillhouse High School, in New Haven (Table 3). At both Randolph and Barton, over 70 percent of the Macy students identified themselves as African American. At DeWitt Clinton, about 46 percent are African American and 46 percent identified themselves as Puerto Rican or Hispanic, which includes those of Caribbean, Central or Latin American descent. Over 90 percent of the Macy students at Hillhouse were African American. At Tuba City, 95 percent of the Macy students were Native Americans, the vast majority of whom identified themselves as Navajo or Hopi. In the fall 1988, nearly two-thirds of the Macy students in the 35 Alabama schools were white; the remaining third were African American.

Table 3.

Enrollment in Macy Programs, Reported by School and Ethnic/Racial Group Membership, Fall 1988

	African American	Puerto Rico	Hispanic	White	Native American	Other*
Randolph	71%	12%	12%	1%	2%	2%
Barton	72%	10%	10%	1%	--	7%
Clinton	46%	26%	20%	1%	1%	6%
Hillhouse	92%	4%	--	--	--	4%
Tuba City	--	--	2%	3%	95%	--
Alabama	38%	--	--	62%	--	--
All	49%	6%	5%	31%	5%	4%

* Includes Asian American, Chicano, Pacific Islander, and other ethnic groups.

Parent Place of Birth and Language Spoken in the Home

A significant number of Macy students in the three New York City programs have parents who were born outside of the United States (Table 4.). At DeWitt Clinton, for example, 80 percent of the Macy students enrolled in the fall 1988 had one or both parents who were born outside of the United States. This figure for Clinton is not surprising, given the fact that over half(53%) of the student population at Clinton is Hispanic. The situation at Barton is similar: nearly three-quarters (73%) of the parents of Macy students at Barton were not born in this country. At Randolph, 44 percent of the parents were not native born. Further analyses of these data reveal that the Puerto Rican, Chicano and Hispanic Macy students account for nearly half (435) of those with parents born outside of the United States. The non-New York schools have very few Macy students with foreign born parents. In the case of Tuba City, there were none among the Macy students enrolled in the fall 1988.

Table 4.

Percent of Macy Students with Parents Born Outside of the United States, Fall 1988

	Parents Born Outside of U.S.	Parents Born in the U.S
Randolph	44%	56%
Barton	73%	27%
Clinton	81%	19%
Hillhouse	11%	89%
Tuba City	--	100%
Alabama	1%	99%

A related set of information regarding language(s) spoken in the home is displayed in Table 5. Over half (52%) of the Macy students at DeWitt Clinton come from families where English is not the native language spoken in the home. At Randolph and Barton, smaller but significant proportions of Macy students come from homes where English is not the native language spoken. The situation at Tuba City is unclear regarding the number of Macy students whose first language or the language spoken in the home is Navajo. However, the program coordinator and the principal estimate that about half of the Macy students come from homes where Navajo is the predominant language spoken. They also estimate that about a third of the Macy students enrolled during the 1988-89 school year were bilingual (Navajo-English). Additional analyses of these data show that Puerto Ricans and Hispanics account for over two-thirds (63%) of the Macy students reporting homes in which English is not the native language spoken; African Americans mainly from Haiti, Trinidad/Tobago, Jamaica and other Caribbean nations account for an additional 22 percent.

Table 5.

Percent of Macy Students from Homes Where English is Not the Native Language Spoken, Fall 1988

	English	Language Other Than English
Randolph	80%	20%
Barton	68%	32%
Clinton	48%	52%
Hillhouse	97%	3%
Tuba City	92%	8%*
Alabama	99%	1%

* School administrators estimate this figure at about 50%

Family and Economic Characteristics of Macy Students

A significant proportion of Macy students come from low income homes. This is particularly the case in the three New York schools. Table 6 displays the percent of Macy students at each of the six project sites who were eligible in the fall 1988 to participate in the federally-funded free or reduced lunch program, an often used proxy measure for family income status. At DeWitt Clinton, two-thirds of the Macy students were eligible for the program, compared to slightly more than a third of the entire student body at Clinton who were eligible. Barton also had nearly two thirds of it's Macy students eligible, which fairly well mirrored the proportion eligible among the student body at large. At Randolph, over half of the Macy students were eligible for the lunch programs, compared to 40 percent of the student body.

Table 6.

Percent of Macy Students Qualified for Free or Reduced Price Lunch, Fall 1988

	Percent of Macy Students Qualified	Percent of Student Body Qualified*
Randolph	52%	40%
Barton	61%	62%
Clinton	63%	38%
Hillhouse	32%	NA
Tuba City	21%	NA
Alabama	26%	NA

* 1987-88 School Year Data

Table 7 reports the results of an analysis of the distribution of Macy students qualified for free or reduced price lunch, by race or ethnic group membership. As shown in the table, over three-quarters of the Hispanic and Puerto Rican students participating in the Macy program(s) in the fall 1988 were eligible for the lunch program. Slightly over half (52%) of the African American students were eligible, as were about a fifth (19%) of the Native American students at Tuba City. Only five percent of the white students participating in Macy programs were eligible.

Table 7.

Percent of Macy Students Qualifying for Free or Reduced Price Lunch, by Race or Ethnic Group Membership, Fall 1988

	Percent Qualified
African American	52%
Puerto Rican	75%
Other Hispanic	82%
Native American	19%
White	5%

Family Structure

A useful descriptor of family status is the proportion of students coming from single versus two parent families. As Table 8 suggests, the majority of Macy students come from two-parent families, yet a significant proportion of the students, especially those in the New York and Hillhouse schools, come from single parent families headed by females. Additional analyses of these data revealed significant differences in the proportion of Macy students in single- versus dual- parent families among African Americans, Hispanics, Puerto Ricans, and whites (Table 9). The proportion of Hispanic and Puerto Rican students coming from single parent families was 46 and 55 percent, respectively, marginally higher than the proportion for African Americans (44%), and significantly higher than that found for Native Americans (14%), and whites (10%).

Table 8.

Percent of Macy Students in Single versus Two-Parent Families, Fall 1988

	Single Parent Families	Two-Parent Families
Randolph	48%	52%
Barton	37%	63%
Clinton	56%	44%
Hillhouse	49%	51%
Tuba City	26%	74%
Alabama	20%	80%

Table 9.

Percent of Macy Students in Single versus Two-Parent Families, by Race or Ethnic Group Membership, Fall 1988		
	Single Parent Families	Two-Parent Families
African American	44%	56%
Puerto Rican	46%	54%
Other Hispanic	55%	45%
Native American	14%	86%
White	10%	90%

Parent Level of Education

A third measure of family socio-economic status, parent level of education, is thought to be an important predictor of student achievement in school. Table 10 displays the mothers' level of education for Macy students in the six project sites, for the fall 1988. In general, the educational attainment levels of the mothers of Macy students fairly well mirrors that found in the general U.S. population. For example, the U.S. Census data for 1980 indicates that 10 percent of the female U.S population have graduated from college, the same percent reported for the mothers of Macy students. Similarly, 38 percent of the female population in the 1980 census graduated from high school, compared to 35 percent of the mothers of Macy students. Table 10 also shows the large proportion of (Macy) mothers from Barton and DeWitt Clinton who have not completed high school. When the data for these two schools are factored out of the data base for Macy students, the levels of educational attainment for mothers of Macy students in the other programs rises significantly above that for the U.S. population as a whole. A more interesting comparison, however, can be made between the educational attainment levels for the mothers of African American Macy students with the 1980 census data for African American females (Table 11). In any of these comparisons, the (Macy) mothers have significantly higher educational attainment levels than those for the U.S. population. For example, 14 percent of the Macy mothers have obtained a bachelors degree or higher, compared to seven percent of the African American females in the general population. Similarly, a significantly smaller proportion of the Macy mothers have less than a high school education (32%) compared to figures for African American females in the U.S. population (38%).

Table 10.

Educational Attainment Levels for Mothers of Macy Students, Fall 1988

	Less than High School	High School Graduate	Some College	College Graduate	Graduate Degree
Randolph	24%	39%	22%	8%	7%
Barton	72%	19%	5%	4%	--
Clinton	66%	16%	9%	4%	5%
Hillhouse	15%	38%	24%	15%	8%
Tuba City	11%	37%	25%	10%	17%
Alabama	13%	42%	23%	14%	8%
All	31%	35%	18%	10%	6%

Table 11.

Comparison of Educational Attainment Levels of Mothers of African American Macy Students to 1980 U.S. Census Data for African American Females					
	Less than High School	High School Graduate	Some College	College Graduate	College Degree
Macy	32%	36%	18%	9%	5%
Census*	38%	34%	16%	5%	2%

* Source: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-70, No. 11, Educational Background and Economic Status: Spring 1984.

What these data suggest is that a significant proportion of the mothers of the Macy students, especially the mothers of students in the Randolph, Hillhouse, Tuba City, and Alabama schools, have attained high levels of formal education. This is an important variable to consider in coming to any conclusions about the performance of the Macy students, their cognitive development, level of achievement motivation, and aspirations for postsecondary education and training. Several decades of research has fairly well established the powerful role served by parents' level of education as a source of explanation for differences in both academic achievement and educational attainment. This is especially the case for the mother's level of education (Table 12.). Higher levels of parent education have been positively associated with more effective styles of parent-child interactions, including mother's strategies for teaching the child, and important cognitive mediators such as language usage and the communication of belief systems and expectations, all of which are important contributors toward academic development.

Table 12.

Educational Attainment Levels of Parents of Macy Seniors Participating in the SAT Program, Spring and Fall 1989					
	Less than High School	High School Graduate	Some College	College Graduate	College Degree
Mother	26%	28%	24%	13%	9%
Father	25%	28%	29%	7%	11%

Evaluation Strategies and Survey Instruments

In December, 1988, the Josiah Macy, Jr. Foundation engaged The McKenzie Group to design and conduct an independent, third-party evaluation of all 39 Macy high school programs. The timing of the evaluation was strategically significant. At this point, a number of Barton, Randolph and Alabama students were midway through university undergraduate programs. And by the end of the 1988-89 school year, all of the Macy-funded project sites would have graduated at least one class of students who had participated in the Macy Program for the full four years of their high school studies.

The McKenzie Group evaluation proceeded on three fronts. At the student level, evaluation efforts concentrated on finding out what difference participation in the Macy Program had made in preparing students, many from educationally and economically disadvantaged backgrounds, to successfully pursue collegiate studies. A key issue with regard to students was whether program participants would have done just as well if they had followed a regular high school program.

At the school level, efforts focused on assessing how Macy resources and support had impacted teachers and school staff, academic programs, instructional methods and materials, student support services, and overall school improvement. A central issue was whether curricular, instructional, and support strategies employed at each school had contributed significantly to the academic performance and preparation of Macy students.

On a broader scale, the evaluation was to address two critical questions: 1) Had resources directed to Macy precollege programs resulted in an increase, real or projected, in the number of minorities preparing for careers in medical or health-related professions? And 2) what are the implications for policy-makers and educational leaders with respect to implementing the programs elsewhere?

To develop the evaluation design a number of factors had to be taken into consideration. Macy Programs operate in 39 high schools in four states. Although program components are very similar across sites, program implementation differs from school to school. Each of the project sites has developed its own version of enrichment and support activities, and the relationships between the schools and cooperating universities vary considerably.

In addition, the school communities and students' backgrounds vary greatly from one school to the next and from one student to another. Because of the differences in students, schools, programs, and communities, the evaluation design included a variety of quantitative and qualitative research strategies. School site visits, student case studies, surveys, document analysis, and comparison of norm-referenced tests yielded a wealth of data and offered a comprehensive picture of what it means to students, staff, and teachers to be part of the Macy program.

Site Visits

Site visits conducted during the spring of 1989 provided the opportunity for a team of experienced educators to observe the Macy program in action, to collect data from school records and program documents, and to interview students, parents, teachers, and staff. Evaluation teams visited each of the three New York City high schools, Hillhouse High School in New Haven, Connecticut, and Tuba City High School in Tuba City, Arizona. In Alabama, the University of Alabama Macy personnel assisted in the selection of four project sites that were considered representative of all 34 participating schools.

Members of the evaluation team observed teaching in mathematics, science, English, and social studies classes. Prior to the class visits, teachers were informed of the scheduled observations. Following the observations, teachers and team members discussed student characteristics, instructional strategies, lesson objectives, and the significance of the lesson within the context of the instructional unit and course objectives.

At each site, evaluators reviewed a variety of school and Macy documents. Student records, program manuals, annual reports, memorandum, curriculum outlines, instructional materials, and staff development guides provided team members information about student participation rates and academic performance, enrichment activities, staff utilization, curricular changes, teacher training initiatives, and overall program management.

Team members also conducted extensive individual and group interviews with students, parents, counselors, Macy-affiliated university personnel, and Macy and non-Macy teachers and administrators. Responses to interview questions offered extensive data about program strengths and weaknesses; differences between Macy and non-Macy students, classes, and teachers; impact of staff development activities; possibilities for expanding the Macy program; and relationships among students and Macy staff, Macy staff and school personnel, and Macy staff and university affiliates.

Student Case Studies

Twenty-four student case studies prepared in spring, 1989 offer rich, qualitative data that reinforce and expand what is known about the young people who participate in the Macy program. Macy staff at each of the project sites in New York City, New Haven, Connecticut, and Tuba City, Arizona, identified four students who represented the school's Macy population in terms of grade level, gender, ethnicity, and family background but also portrayed a range of academic performance and achievement levels. In Alabama, though all four students attended the same high school, University of Alabama and school personnel considered the sample to be representative of students enrolled in the Macy program at other Alabama schools.

Interviews with students, their teachers, school counselors, and parents or guardians focused on the students' experiences as Macy participants, their relationships with Macy staff, their educational and occupational aspirations, the students' perceptions of their performance and chances for future academic success, and the differences between Macy and non-Macy students, teachers, and classes. A review of each student's cumulative records furnished additional information about his or her attendance record, extracurricular activities, honors, coursework, and academic achievement and performance as indicated by standardized tests and grades.

Student Surveys

Questionnaires distributed to Macy seniors and graduates offer important information about students' preparation for collegiate studies, decisions regarding college application and selection, sources of financial aid and support, major fields of study, and academic performance. The survey of Macy seniors was administered at Clara Barton, A. Phillip Randolph, DeWitt Clinton, Hillhouse, and Tuba City High Schools in February, 1990. Two graduate surveys were conducted, one by the McKenzie Group in 1989 and the other in 1990 as part of the Macy Documentation Program.

Scholastic Aptitude and Norm-Referenced Tests

The Educational Testing Service (ETS) supplied a summary of test performance and demographic data for a sample of Macy seniors taking the Scholastic Aptitude Test (SAT) in 1989. Macy student scores on math and verbal portions of the SAT, Achievement Tests, and the Test of Standard Written English were analyzed.

Summary data from the Student Demographic Questionnaire (SDQ) permitted analysis of SAT results across several important variables, including family income and language spoken at home. The SDQ summary also produced useful information about students' plans for advanced academic study.

In addition to ETS data, results from three subtests of the Comprehensive Test of Basic Skills (CTBS, McGraw Hill, 1989) also allow comparisons with appropriate national norms. A sample of 197 Macy seniors at Barton, Randolph, DeWitt Clinton, Hillhouse, and Tuba City took the Reading, Language, and Mathematics subtests in February, 1990.

Additional Data Sources

Previous evaluation and data collection efforts greatly enhanced and facilitated the assessment endeavor. Since 1984, the Macy Documentation Program has collected demographic and academic information for all students enrolled in Macy programs. Updated yearly, the Program's extensive data base maintains valuable information regarding students' family background, academic performance, college acceptances, and financial aid awards. Annual reports and case studies prepared for the Macy Documentation Program have provided another vital source of student data and specific information about school programs and enrichment activities. In addition to the Macy Documentation Program database, the New York Board of Education mandates the collection of student demographic and academic performance information.

QUESTIONNAIRE FOR MACY SENIORS TAKING THE COMPREHENSIVE TESTS OF BASIC SKILLS

DIRECTIONS: Please answer each question below to the best of your ability. Check only one response unless otherwise requested.

1. During the year after you leave high school, which of the following do you think will take up most of your time? (Mark only one item — the one that will take the most of your time.)

___ working
___ entering an on-the-job training program or apprenticeship
___ going into regular military service
___ being a full-time homemaker
___ going to a vocational, technical or business school
___ going to a junior or community college
___ going to a 4-year college or university
___ other (please specify) _____

2. What is the highest level of education you plan to complete?

___ graduate from high school, but not go beyond that
___ graduate from high school and then go to a vocational, technical or business school
___ go to a junior or 2-year community college
___ go to a 4-year college or university
___ go to a graduate or professional school after college

3. Are you planning to apply to a college or university for the fall of 1990? ___ yes ___ no ___ not sure

If yes, to which colleges will you apply? (List your top three choices.)

1. _____
2. _____
3. _____

4. If you have applied to a college or university, to what extent did the following reasons influence your decision to apply to a particular school? **(1-Greatly Influenced; 2-Moderately Influenced; 3-Little or No Influence)**

___ overall academic reputation of the school
___ quality of a particular department or program
___ availability of scholarships/financial aid
___ athletic program
___ size of the school
___ closeness to home
___ reputation for being a friendly school/social activities
___ advice of teacher or counselor
___ advice of relatives
___ friends are applying

5. How did you find out about particular colleges or universities?

___ guidance counselor or teacher provided information
___ parents, siblings or other relatives told me about the school
___ found information (such as catalogues) in the high school resource room or library
___ saw information posted in the high school hallways
___ schools sent me information
___ friends told me about the school
___ other (please explain) _____

6. What major field of study do you hope to concentrate on when you attend college?

___ **physical sciences** (i.e., physics, chemistry, astronomy, earth science)
___ **biological sciences** (i.e., biology, anatomy, nursing)
___ **social sciences** (i.e., history, political science, education)
___ **humanities** (i.e., English, literature, philosophy, languages)
___ **fine arts** (i.e., music, art, dance, drama)
___ **mathematics** (i.e., math, computer science)
___ **business** (business administration, accounting, management)
___ **communications** (i.e., journalism, speech, linguistics)
___ **other** (please explain) _____

7. What types of financial support do you anticipate receiving to finance your undergraduate studies? (Check **all** that apply)

___ academic scholarship
___ athletic scholarship
___ grant or fellowship
___ college student loan
___ work/studies program
___ other (please explain) _____

8. How closely did what you expected to get out of high school match what you actually got out of it?

___ I got much more than I expected
___ I got more than I expected
___ I got about what I expected
___ I got less than I expected
___ I got much less than I expected

9. In general, do you think your high school program has prepared you to meet the academic demands of college?

___ definitely yes
___ probably yes
___ probably no
___ definitely no

10. Consider the following aspects of your high school program. How beneficial was each aspect in preparing you for college? **(Please rate <u>each</u> item: 1-Very Beneficial; 2-Moderately Beneficial; 3-Little or No Benefit)**

___ quality of the teaching/instruction of courses
___ peer support received from other students
___ counseling and support services offered to students
___ college orientation activities sponsored by your high school
___ summer academic programs sponsored by your high school
___ curriculum/courses offered to students
___ being grouped with other high achieving students
___ enrichment activities (field trips, travel, cultural events)
___ test-taking courses (i.e., SAT Prep classes, etc.)
___ other (please explain) _____

11. Please take a minute to tell us about the career or occupation you see yourself pursuing after completing your education/training.

_____

_____

_____

MACY GRADUATE FOLLOW-UP SURVEY

DIRECTIONS: Please answer each of the questions found below. When you have completed the questionnaire, place it in the self-addressed, stamped envelope provided and mail it no later than July 24, 1989. If you are on summer break from college, please answer the questions in terms of the 1988-89 academic or school year.

1. Are you currently (1988-89) enrolled as a student in a college or university? (Check **one** only.)

___a. full-time student
___b. part-time student
___c. have never attended college or university
___d. started a college/university program, but dropped out
___e. will enroll as full-time freshman (Fall 1989)
___f. will enroll as part-time freshman (Fall 1989)

2. If you chose **not** to attend or are **no longer** attending college, please indicate the reason(s) why: (Check all that apply.)

___a. lack of financial support
___b. joined the military
___c. personal or family circumstances
___d. low grades in high school or college courses
___e. other: (Please explain) _____

_____

NOTE:
1. If you were a college student in 1988-89 or if you plan to enroll as a freshman in 1989, continue with Question #3.
2. If you are a college graduate, please skip to Question #8.
3. If you are not currently a full- or part-time student, please skip to Question #12.

_____

3. If you are or will be a full- or part-time student, are you or will you be a: (Check **one** only.)

___a. freshman
___b. sophomore
___c. junior
___d. senior
___e. graduate student

4. Is the college or university which you now attend: (Check **one** only.)

___a. a four-year college/university
___b. a two-year community or junior college
___c. a technical/vocational training school
___d. a professional or graduate school (i.e, medicine, law)

5. What is the name of the school/college you now or will attend:

_____

6. In addition to the college/school in which you are now enrolled or will enroll, have you been an **undergraduate** student in any **other** schools/colleges since graduating from high school? (Check those that apply.)

____a. no
____b. a two-year community or junior college
____c. a four-year college/university
____d. a technical/vocational training school
____e. other: (explain) _____

7. What is your current college grade-point average? (Check **one** only.)

____a. between 3.5 and 4.0
____b. between 3.0 and 3.4
____c. between 2.5 and 2.9
____d. between 2.0 and 2.4
____e. less than 2.0

8. Which of the following best represents your **undergraduate** major field of study: (Check **one** only.)

____a. **physical sciences** (i.e., physics, chemistry, astronomy, earth science)
____b. **biological sciences** (i.e.,biology, anatomy, nursing)
____c. **social sciences** (i.e., history, political science, education)
____d. **humanities** (i.e., English, literature, philosophy, languages)
____e. **fine arts** (i.e., music, art, dance, drama)
____f. **mathematics** (i.e., math, computer science)
____g. **business** (i.e., business administration, accounting, management)
____h. **communications** (i.e., journalism, speech, linguistics)
____i. **Other:** (Please explain) _____

9. Did you or have you received any financial support for your **undergraduate** studies? (Check **all** that apply.)

____a. academic scholarship
____b. athletic scholarship
____c. grant or fellowship
____d. college student loan
____e. work/studies program
____f. other: (explain) _____

10. What proportion of your **undergraduate** tuition and room/board costs were covered by the financial support you received? (Check **one** only.)

____a. more than 75 percent of the costs
____b. from 50 to 75 percent of the costs
____c. about 50 percent of the costs
____d. from 25 to 50 percent of the costs
____e. less than 25 percent of the costs

11. Please use the space provided to **briefly** describe your career or occupational plans after completing college:

_____

_____

_____

12. How much influence do you think your experiences in the Macy (Bio-Prep) program have had on your choice of an occupation or career? (Check **one** only.)

____a. a lot of influence
____b. some influence
____c. little or no influence

13. In general, do you think the Macy program prepared you to meet the academic demands you have experience in your college courses? (Check **one** only.)

____a. definitely yes
____b probably yes
____c. probably no
____d. definitely no

14. Which aspect of the Macy (Bio-Prep) program do you think was **most** beneficial in preparing you for college? (Check **one** only.)

____a. quality of the teaching/instruction in the Macy courses
____b. peer support received from other students in the Macy Program
____c. counseling and support services offered to Macy students
____d. college orientation activities sponsored by the Macy Program
____e. summer academic programs/camps sponsored by the Macy Program
____f. curriculum/courses offered to the Macy students
____g. being grouped with other high achieving students
____h. enrichment activities (field trips, travel, cultural events)
____i. test-taking courses (i.e., SAT Prep classes, etc.)
____j. other: (please explain) _____

15. Given your current perspective as a college student, in what ways could the Macy Program have been more beneficial to you? (Check **all** that apply.)

____a. the Macy courses should have been more demanding
____b. instruction should have stressed development of study skills
____c. the instructional program should have required the students to take more initiative in their studies
____d. development of English and writing skills should have been stressed more
____e. instruction should have stressed application of academic skills and problem solving
____f. more college counseling should have been offered
____g. more help should have been offered to students who were applying to colleges or for financial aid
____h. other: (please explain) _____

We would like to conduct brief telephone interviews with some of the respondents to this survey. Please provide us with your telephone number and the best days and time to reach you if you would be willing to participate in these telephone interviews.

Telephone number: (area code) _____ (number) _____

Best days/times to reach you: _____

WHEN YOU HAVE COMPLETED THIS QUESTIONNAIRE, PLEASE ENCLOSE IT IN THE STAMPED, SELF-ADDRESSED ENVELOPE PROVIDED AND SEND IT TO:

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